
I hereby give notice that a hearing by commissioners will be held on:

Dates: Monday 9 - Thursday 12 November 2020
Tuesday 17 - Friday 20 November 2020
Tuesday 24 - Friday 27 November 2020
Monday 30 November - Thursday 3 December 2020
Tuesday 8 - Friday 11 December 2020

Overflow days should the panel require them
Wednesday 16 - Friday 18 December 2020

Time: 9.30am each day
Meeting Room: Warkworth Town Hall
Venue: 2 Alnwick Street, Warkworth

HEARING REPORT – PRIVATE PLAN CHANGE 42

1232 STATE HIGHWAY 1, WAYBY VALLEY

WASTE MANAGEMENT NZ LIMITED

COMMISSIONERS

Chairperson	Sheena Tepania
Commissioners	Alan Watson
	David Mead
	Wayne Donovan
	Michael Parsonson

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Note: The reports contained within this document are for consideration and should not be construed as a decision of Council. Should commissioners require further information relating to any reports, please contact the hearings advisor.

WHAT HAPPENS AT A HEARING

At the start of the hearing, the Chairperson will introduce the commissioners and council staff and will briefly outline the procedure. The Chairperson may then call upon the parties present to introduce themselves to the panel. The Chairperson is addressed as Mr Chairman or Madam Chair.

Any party intending to give written or spoken evidence in Māori or speak in sign language should advise the hearings advisor at least five working days before the hearing so that a qualified interpreter can be provided.

Catering is not provided at the hearing. Please note that the hearing may be audio recorded.

Scheduling submitters to be heard

A timetable will be prepared approximately one week before the hearing for all submitters who have returned their hearing appearance form. Please note that during the course of the hearing changing circumstances may mean the proposed timetable is delayed or brought forward. Submitters wishing to be heard are requested to ensure they are available to attend the hearing and present their evidence when required. The hearings advisor will advise submitters of any changes to the timetable at the earliest possible opportunity.

The Hearing Procedure

The usual hearing procedure is:

- The applicant will be called upon to present his/her case. The applicant may be represented by legal counsel or consultants and may call witnesses in support of the application. After the applicant has presented his/her case, members of the hearing panel may ask questions to clarify the information presented.
- The relevant local board may wish to present comments. These comments do not constitute a submission however the Local Government Act allows the local board to make the interests and preferences of the people in its area known to the hearing panel. If present, the local board will speak between the applicant and any submitters.
- Submitters (for and against the application) are then called upon to speak. Submitters may also be represented by legal counsel or consultants and may call witnesses on their behalf. The hearing panel may then question each speaker. The council officer's report will identify any submissions received outside of the submission period. At the hearing, late submitters may be asked to address the panel on why their submission should be accepted. Late submitters can speak only if the hearing panel accepts the late submission.
- Should you wish to present written information (evidence) in support of your application or your submission please ensure you provide the number of copies indicated in the notification letter.
- Only members of the hearing panel can ask questions about submissions or evidence. Attendees may suggest questions for the panel to ask but it does not have to ask them. No cross-examination - either by the applicant or by those who have lodged submissions – is permitted at the hearing.
- After the applicant and submitters have presented their cases, the chairperson may call upon council officers to comment on any matters of fact or clarification.
- When those who have lodged submissions and wish to be heard have completed their presentations, the applicant or his/her representative has the right to summarise the application and reply to matters raised by submitters. Hearing panel members may further question the applicant at this stage.
- The chairperson then generally closes the hearing and the applicant, submitters and their representatives leave the room. The hearing panel will then deliberate "in committee" and make its decision.
- Decisions are usually available within 15 working days of the hearing.

A NOTIFIED PLAN MODIFICATION TO THE AUCKLAND UNITARY PLAN BY WASTE MANAGEMENT NZ LIMITED

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Ryan Bradley Planner

Reporting on private plan change 42 that seeks to introduce a new precinct into the Auckland Unitary Plan - the Auckland Regional Landfill precinct at 1232 State Highway 1, Wayby Valley. The reporting officer is recommending, subject to contrary or additional information being received at the hearing, that the application be **approved with modifications**.

APPLICANT: WASTE MANAGEMENT NZ LIMITED

Hearing Report for Proposed Plan Change 42 (Private): Auckland Regional Landfill – Wayby Valley to the Auckland Unitary Plan (Operative in part)

Section 42A Hearing Report under the Resource Management Act 1991

Report to: Hearing Commissioners

Hearing Date/s: 9 November to 11 December 2020 (16-18 December overflow)

File No: S42A Hearing Report PPC 42

File Reference U:\CPO\RLP\FC\LUP\UP MODIFICATIONS\PC042- Auckland Regional Landfill (Wayby Valley - Private)

Report Author Ryan Bradley – Principal Planner, Plans and Places Department

Report Approvers Peter Vari – Team Leader, Plans and Places Department

Report produced 24 September 2020

Summary of Proposed Plan Change 42 (Private): Auckland Regional Landfill – Wayby Valley

Plan subject to change	Auckland Unitary Plan (Operative in part), 2016
Number and name of change	Proposed Plan Change 42 (Private): Auckland Regional Landfill – Wayby Valley to the Auckland Unitary Plan
Status of Plan	Operative in part
Type of change	Proposed private plan change
Requestor	Waste Management New Zealand Limited
Site subject to plan change	1232 State Highway 1, Wayby Valley and part of Mahurangi Forest, Mahurangi, Auckland
Date of approval (or adoption) for notification	13 March 2020
Parts of the Auckland Unitary Plan affected by the proposed plan change	Addition of a new 'Auckland Regional Landfill' precinct to the planning maps and to Chapter I – Precincts.
Date of notification of the proposed plan change and whether it was publicly notified or limited notified	Publicly notified – 26 March 2020
Submissions received (excluding withdrawals)	412
Date summary of submissions notified	25 June, 20 August 2020, 4 September, 18 September
Number of further submissions received (numbers)	11
Legal Effect at Notification	No
Main issues or topics emerging from all submissions	<ul style="list-style-type: none"> • Conflicts with the principles of the Resource Management Act (1991) and Auckland Unitary Plan (Operative in Part) • Conflicts with waste minimisation legislation and plans • Bespoke provisions should not be applied to this site • Potential effects on waterways • Potential effects on ecology • Potential effects on transport • Risks to the environment • Alternative waste management methods should be used instead • Cultural issues • Contribution to climate change

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Abbreviations

The abbreviations and shortenings used in this report are outlined below.

Abbreviation	Meaning
PC42	Proposed Private Plan Change 42 – Auckland Regional Landfill: Wayby Valley
'related resource consent'	BUN60339589 to construct and operate a new regional landfill at 1232 State Highway 1, Wayby Valley
RMA	Resource Management Act (1991)
Unitary Plan	Auckland Unitary Plan (Operative in Part)
WMNZ	Waste Management New Zealand Ltd
The 'requestor' / 'applicant'	Waste Management New Zealand Ltd
AEE	Assessment of Environmental Affects
ITA	Integrated Traffic Assessment
CBA	Cost benefit analysis
EIA	Economic Impact Assessment
CVA	Cultural Values Assessment
NPS-FM	The National Policy Statement for Freshwater Management 2020
NES:FM	The Resource Management (National Environmental Standards for Freshwater) Regulations 2020
NPS:REG	National Policy Statement for Renewable Energy Generation (2011)
NPS:IB	(Draft) National Policy Statement for Indigenous Biodiversity (2019)
NES:AQ	National Environmental Standard for Air Quality (2004)
NES:DW	National Environmental Standard for Sources of Drinking Water (2008)
NES:PF	National Environmental Standard for Plantation Forestry (2018)
SEA	Significant Ecological Area
SH1	State Highway 1
NZTA	New Zealand Transport Agency
NMWOKDT	Ngā Māunga Whakahii o Kaipara Development Trust
Watercare	Watercare Services Limited
OECD	Organisation for Economic Co-operation and Development

Māori terms

Māori/te reo terms used in this report are outlined below.

Māori/te reo terms	Definition
Iwi	Extended kinship group or tribe.
Hapū	Kinship group, clan, tribe, subtribe and primary unit in traditional Māori society.
Mana whenua	Customary authority exercised by an iwi or hapū in an identified area.
Tangata whenua	In relation to a particular area, means the iwi, or hapū, that holds mana whenua over that area.
Rohe	Territory or area.
Mana	Prestige, authority, status, influence – a supernatural force in a person, place or object.
Tikanga or tikanga Māori	Means Māori customary values and practices.
Mauri	Life force or essence – the essential quality and vitality of a being or entity.
Whenua	Land

Wai	Water
Hau	Air
Awa	River or stream
Moana	Sea or ocean
Whānau	Extended family or family group.
Whakapapa	Genealogy, lineage or descent.
Tīpuna/Tūpuna	Ancestors, grandparents.
Marae	Courtyard - the open area in front of the whareniui, where formal greetings and discussions take place. Often also used to include the complex of buildings around the marae.
Waka	Canoe
Hui	Gathering or meeting
Te Tiriti o Waitangi	The Treaty of Waitangi
Te Ao Māori	The Māori World
Kaitiakitanga	Means the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Māori in relation to natural and physical resources; and includes the ethic of stewardship.
Kaitiaki	Trustee, minder, guard, custodian, guardian, caregiver, keeper, steward.
Tino rangatiratanga	Self-determination, sovereignty, autonomy, self-government, domination, rule, control, power.
Rangatira	Chief or leader (male or female)
Mātauranga	Knowledge, wisdom, understanding, skill
Kaimonana	Seafood or shellfish
Rāhui	A temporary ritual prohibition, closed season, ban, reserve. Often a conservation measure.
Pou rāhui	A visible sign or post marking a rāhui.
Tapu	Sacred, prohibited, restricted, set apart, forbidden. A restriction or prohibition, violation of which can result in retribution.
Wāhi tapu/ Waahi tapu	Scared ancestral sites and places of significance to iwi, hapū or whānau.
Taonga	Treasure, anything prized - applied to anything considered to be of value including socially or culturally valuable objects, resources, phenomenon, ideas and techniques.
Wairua	Spirit or soul
Whanaungatanga	Relationship, kinship, sense of family connection.
Ahi kaa/Ahi kā	Burning fires of occupation, continuous occupation - title to land through occupation by a group, generally over a long period of time.
Atua	Ancestor with continuing influence or god/supernatural being.
Tokanga	Large basket for food, hamper, picnic basket.
Kotahitanga	Unity, togetherness, solidarity, collective action.
Rūnanga	Council, tribal council, assembly, board, boardroom, iwi authority - assemblies called to discuss issues of concern to iwi or the community.
Papatūānuku	Earth, Earth mother and wife of Ranginui - all living things originate from them.
Ranginui	Atua of the sky and husband of Papatūānuku, from which union originate all living things.
Puna	Spring, well or pool of water.
Te mana o te wai	Management of the holistic well-being of freshwater.

1. EXECUTIVE SUMMARY

1. Proposed Private Plan Change 42 – Auckland Regional Landfill: Wayby Valley (**PC42**) to the Auckland Unitary Plan (Operative in Part) seeks to include a new precinct within the Unitary Plan that would provide for the Auckland Regional Landfill (subject to a consent process) by way of specific identification and plan provisions.
2. PC42 was lodged by Waste Management New Zealand Limited (**WMNZ**) following the process set out in the relevant clauses of Parts 1 and 2 of Schedule 1 of the Resource Management Act 1991 (**RMA**).
3. It is important to clarify that there are two separate but related RMA processes currently underway for the proposed Auckland Regional Landfill at 1232 State Highway 1, Wayby Valley. There is PC42 which is addressed by this report and there is a separate application for resource consents (BUN60339589) for a *specific* and *detailed* proposal to construct and operate a new regional landfill. Recommendations on the resource consents are covered in a separate report.
4. PC42 sets up a *framework* in the Unitary Plan to identify on the planning maps the site for a potential landfill. The provisions of PC42 do not permit a landfill to be established. Rather, a new landfill would require a resource consent for a discretionary activity and that resource consent would need to be publicly notified.
5. PC42 was publicly notified on 26 March 2020 and 412 submissions were received and 11 further submissions. Over three-quarters of the submission points sought that PC42 be declined.
6. As the precinct does not introduce any new permitted activities, the environmental effects of PC42 relate specifically to the wording of the precinct itself. The precinct ‘as notified’ seeks to amend some Unitary Plan provisions to make future consenting of a landfill less onerous.
7. Overall, I accept that the site could be suitable for a landfill and therefore I support the precinct in terms of its new discretionary activity status for a new landfill. The non-complying activity status for a landfill that applies to every rural zoned site in Auckland does not take into account the specifics of this particular site as explained in the private plan change request.
8. The location of the proposed Auckland Regional Landfill precinct in Wayby Valley has the advantages of being on a very large site that is relatively remote, with few close neighbours. Many of the typical adverse effects generated from a landfill such as noise, dust, lighting, visual, air discharges, and odour) could be well contained within the site due to the large separation distances/buffer from neighbouring activities.
9. The valley terrain is generally appropriate for a landfill and the underlying geology appears to be suitable. The site connects directly onto SH1 meaning heavy vehicles (i.e. waste trucks) accessing the site do not need to take regular trips down rural or local roads. State Highway 1 through the Dome Valley is also receiving significant safety improvement works that will be completed before any landfill is intended to be established. I also note that should the Notice of Requirement for the Warkworth to Wellsford motorway be confirmed, the site will be well positioned to gain access (in the long-term future) from a new Wellsford motorway interchange at Wayby Valley Road, just over 1km from the site.

10. On the other hand I accept that there are other aspects of the Wayby Valley site that are not a comfortable fit for a landfill site, such the adverse cultural effects as explained by mana whenua, areas of high ecological values within the site, a high rainfall level, and being located over an aquifer that is the source of a municipal drinking water system.
11. I do not assert that the Wayby Valley site is the ideal site for a landfill, but I note that finding a suitable site in Auckland for a landfill will inevitably involve a balance of trade-offs between the different factors to consider. The industry guidelines around landfill siting acknowledge that most sites will not meet all the criteria and it is not necessary to do so.
12. On balance, from the site selection information I have reviewed and considering the views of the council specialists, I do not consider the Wayby Valley site to be fundamentally flawed for a landfill, although I accept that there some matters that are finely balanced including cultural effects, freshwater ecology, terrestrial ecology, and human health risk.
13. While it is my view that the Wayby Valley site could be suitable for a landfill, I would again emphasise that the precinct still requires any new landfill to apply for a publicly notified discretionary resource consent. Not every resource consent application for a new landfill will necessarily be granted, with each being assessed on its own merits.
14. I have recommended changes to the precinct text and map primarily relating to groundwater, ecology, cultural effects, transport, risks to the environment, and impacts on other infrastructure. These changes will ensure that the adverse effects on these matters are able to be fully assessed in a resource consent application. I have also recommended changes to the precinct provisions to ensure that the large buffer area around the landfill remains effective. With the recommendations to modify the precinct, I am of the view that PC42 will now better give effect to the Regional Policy Statement, the National Policy Statement on Freshwater Management (2020), and will be in accordance with the National Environmental Standards for Freshwater (2020).
15. Overall, there are no effects on the environment from PC42 that would require the private plan change to be declined. The full range of environmental effects are able to be considered during a notified resource consent for a discretionary activity process.
16. I am aware that there has been interest and discussion over the last six months around alternative landfill locations and alternative waste disposal methods (as evidenced through submissions). I have noted in this report that under the RMA, the council's scope is limited in what 'alternatives' it can require the applicant to consider. On a similar note, while the matter was raised in submissions, the RMA currently prevents the council from being able to consider the climate change effects of any greenhouse gas emissions.
17. I do not consider that the proposed Auckland Regional Landfill precinct conflicts with waste minimisation plans and initiatives as these talk about a *progression* towards zero waste. In the interim landfills will be required for the disposal of residual waste (that cannot be reduced, reused, or recycled) in a safe, sanitary, and contained manner.
18. The discussion and recommendations in this report are intended to assist the Hearing Commissioners. The recommendations contained within this report are not the decisions of the Hearing Commissioners.
19. Based on the analysis in this report I recommend that PC42 be **approved with modifications** under clause 29(4)(a) of Schedule 1 of the RMA. The modifications are shown in **Attachment 1** and **Attachment 2**.

2. BACKGROUND

2.1. Resource consent applications and a private plan change request

1. It is important at the outset of this report to clarify that there are two separate but related Resource Management Act (1991) ('**RMA**') processes currently underway for the proposed Auckland Regional Landfill at 1232 State Highway 1, Wayby Valley. One is a resource consent application process and that is covered in a separate report¹. This report addresses the private plan change request by Waste Management New Zealand Ltd ('**WMNZ**').
2. WMNZ lodged an application for resource consents in May 2019 for the construction and operation of a new regional landfill facility within the Wayby Valley area, between Warkworth and Wellsford. The landfill is proposed to be a Class 1 landfill, being one that accepts municipal solid waste, which includes residential and commercial waste, construction and demolition waste, some industrial wastes (that meet strict acceptance criteria) and contaminated soils (but not hazardous waste).
3. In August 2019 WMNZ lodged a private plan change request with Auckland Council that covers the same site as the resource consent applications. The private plan change request seeks to add an 'Auckland Regional Landfill' precinct into the Auckland Unitary Plan (Operative in Part) ('**Unitary Plan**') that includes specific objectives, policies, and rules for a potential landfill.
4. The application for resource consents and the private plan change were jointly publicly notified in on 26 March 2020 and will have a joint hearing beginning in November 2020.
5. While both the application for resource consents and the private plan change request deal with the same overall matter, being a regional landfill in Wayby Valley, they are quite different and separate legal processes.
6. The resource consent process assesses a *specific* and *detailed* proposal for a landfill. If resource consents are granted, the landfill could then begin to be established on the site. As noted, the application for resource consents are addressed through a separate report.
7. In contrast, the private plan change request is a higher-level process that sets up a *framework* in the Unitary Plan to identify on the planning maps the site for a potential landfill. If approved, the private plan change would not directly enable a landfill to be established – a resource consent would need to be obtained². The private plan change request, if approved, would set up the plan provisions that a future new, or altered, landfill application for resource consents would be assessed against.
8. It is important to note that the application for resource consents currently being processed will be assessed against the *current* Unitary Plan provisions, rather than those provisions proposed in the private plan change request. The proposed private plan change provisions have no legal effect until they are made operative. A private plan change can only be made operative, when there is a council decision approving the Private Plan Change, and any appeals on the council decision are resolved, or if there are no appeals at the conclusion of the appeal period.

¹ Report on notified application for resource consent under the Resource Management Act 1991 for BUN60339589 (Reporting officer for the council – Mark Ross).

² Based on the precinct provisions as notified: a new landfill is a discretionary activity.

2.2. Private Plan Change 42: Auckland Regional Landfill – Wayby Valley

9. Private Plan Change 42 – Auckland Regional Landfill: Wayby Valley ('PC42') to the Unitary Plan is a request made to the council by WMNZ in accordance with Clause 21 of Schedule 1 of the RMA.
10. The request was formally lodged on 14 August 2019 (refer to **Attachment 4**) and was updated in March 2020. The private plan change request seeks to add a new Auckland Regional Landfill precinct to the Unitary Plan maps and introduce new provisions, specific to the precinct. Further detail on the proposed precinct is included in section 6.2 of this report.
11. The following documentation has been provided in support of the request (refer to **Attachment 4**):
 - Private Plan Change Request (amended March 2020) – including an assessment of environmental effects and section 32 analysis prepared by Tonkin and Taylor.
 - Technical Report A Geotechnical factual report
 - Technical Report B Geotechnical interpretive report
 - Technical Report C Probabilistic seismic hazard assessment
 - Technical Report D Air quality assessment
 - Technical Report E Hydrogeological assessment
 - Technical Report F Water quality baseline Monitoring Report
 - Technical Report G Assessment of aquatic and terrestrial ecological values and effects Report
 - Technical Report H Landscape and Visual Assessment Report
 - Technical Report I Assessment of economic effects
 - Technical Report J Traffic
 - Technical Report K Archaeological Assessment
 - Technical Report L Assessment of Environmental Noise Effects
 - Technical Report M Integrated Transport Assessment
 - Technical Report N Engineering Report
 - Technical Report O Waste Acceptance Criteria
 - Technical Report P Stormwater and Industrial and Trade Activity Report
 - Technical Report Q Draft Landfill Management Plan Contents Page
 - Technical Report R Sediment and Erosion Control Assessment
 - Technical Report S Risk Management Assessment
 - Technical Report T Health Risk Assessment Report
 - Compiled Further Information Responses
12. The private plan change request report by Tonkin and Taylor (dated February 2020) states that:

“WMNZ has gone through an extensive site identification and selection process over nearly a decade, which considered a range of factors including access, site size, buffer availability, geology and environmental and cultural factors. This process resulted in the identification of the Wayby Valley site as the preferred location for the landfill due to a number of features, including:

 - Its proximity to central Auckland;

- Its proximity to State Highway 1;
- Ability to maintain adequate separation distance from sensitive receivers;
- Avoidance of identified and mapped sites of cultural significance;
- Avoidance of significant ecological features and other features identified in the Auckland Unitary Plan;
- Appropriate underlying geology.

Extensive investigation of the proposed precinct has been undertaken for the purpose of supporting the resource consent application which was lodged in May 2019. Consequently, WMNZ requests a private plan change to recognise the distinct set of characteristics of this site. This private plan change seeks to introduce a new precinct into the Unitary Plan – the Auckland Regional Landfill Precinct. The precinct will identify the precinct in the planning maps, and will introduce new provisions, specific to the precinct. The reasons for the private plan change are summarised as follows:

- To appropriately recognise landfills as infrastructure within the Unitary Plan, by identifying a site within Auckland that has been assessed as being suitable for a new landfill, and describing this site through the use of a precinct and managing future effects of activities within the precinct through bespoke objectives, policies and rules;
- In anticipation of a landfill being established at the site, providing recognition of the site in the planning framework for the Auckland Region, consistent with the treatment of other largescale infrastructure in the region, and to manage potential future reverse sensitivity effects;
- To enable efficient operation of a future landfill at the site throughout its operating life, by targeting future re-consenting requirements to the nature of the discharge and measures to avoid, remedy or mitigate effects.

[*The WMNZ private plan change request report*] assesses the private plan change against the requirements of Schedule 1 and s32 of the RMA, and concludes:

- The proposed precinct will generate positive effects, and has no level of potential adverse effects which would make the site unsuitable for consideration for landfill construction and operation.
- The precinct and sub-precinct provisions will ensure future development within the Precinct gives effect to and is consistent with the Unitary Plan Regional Policy Statement, the regional and district plan objectives and policies in the Unitary Plan, as well as the Auckland Plan.
- The proposed precinct, including the objectives, are consistent with the purpose of the RMA. The proposed objectives of the private plan change are considered to be the most appropriate and effective means of achieving the purpose of the RMA, compared to the current zone or practicable alternative options.
- The proposed precinct is considered to be the most appropriate option for achieving the objectives of the private plan change and more broadly the objective and policies of the Unitary Plan. The private plan change will efficiently and effectively achieve the overarching objectives of the Unitary Plan, in particular the themes of enabling infrastructure whilst ensuring effects of future activities within the precinct are appropriately assessed and managed.”

3. CONTEXT

13. A review of the public submissions on PC42 illustrates that there are differing levels of knowledge about the waste management system in Auckland. This is understandable as local councils often own their local landfills and provide waste collection services. Private ownership of landfills, as proposed by PC42, is unusual in New Zealand.³

³ Auckland Waste Management and Minimisation Plan (2018)

14. This section of the report seeks to give some of the wider context around waste management and minimisation in Auckland by giving an overview of the system, clarifying the council's responsibilities, summarising initiatives underway to reduce waste to landfills, and exploring the alternatives to an Auckland Regional Landfill at Wayby Valley.

3.1. The management of waste in Auckland

15. Waste collection and disposal services is a complex private-public system in Auckland. Auckland's waste services are highly fragmented, with large commercial enterprises (e.g. WMNZ, EnviroNZ (formerly known as Envirowaste)), small-scale operators, and Auckland Council all contributing to management and minimisation efforts. Waste management legislation that sets out local authority's responsibilities, private interests and market-led solutions have led to the existing public-private waste system.
16. Collection of waste in Auckland comprised of three key sources:
- Kerbside collection that is provided under contract for Auckland Council that covers the full process of collection, sorting and disposal
 - Drop off to transfer stations or direct to a recycling centre or a landfill
 - Private companies that enter into contracts for collection and disposal.⁴
17. Auckland currently relies on three main landfills:
- Whitford (a joint venture between WMNZ and Auckland Council - operated by WMNZ)
 - Hampton Downs in the north Waikato area (owned by EnviroNZ)
 - Redvale in Silverdale (owned by WMNZ)
- Around 40 per cent of Auckland's waste to landfill is currently trucked out of the region.⁵
18. The Whitford landfill has consents to enable it to operate until 2041. However, there are restrictions on vehicle movements to and from the landfill which limits the annual volume that can be received at the site. Hampton Downs has consents to accept waste until 2030.
19. In 2014 WMNZ sought resource consents to extend the life of the Redvale landfill up until 2048. The application was granted but only with an extension until 2028. The inability to continue to use Redvale in the long-term future has led to the Auckland Regional Landfill proposal by WMNZ.
20. While Auckland Council does not control and provide for all waste disposal services and management in the region, council has obligations under the Waste Minimisation Act (2008) to "encourage effective and efficient waste management and minimisation". Council has used its statutory powers under the Waste Minimisation Act (2008) and Local Government Act (2002) to create the Waste Management and Minimisation Bylaw 2019. This bylaw, among other things, enables Auckland Council to prohibit or regulate the deposit of waste, and to require operators of waste management and resource recovery facilities to obtain an approval to operate from Auckland Council that includes reporting on the types of materials deposited, collected, transported, received, stored processed or disposed of.
21. Council has a responsibility under the Waste Minimisation Act (2008) to undertake regular waste assessments which provide a "forecast of future demand for collection,

⁴ Robertson, N. (2019). *Waste to energy – The incineration option*.

<https://berl.co.nz/sites/default/files/2020-07/BERL%20Report%20WtE%20final%20July.pdf>

⁵ Auckland Waste Management and Minimisation Plan (2018)

recycling, recovery, treatment, and disposal services within the district...and how those demands will be met including proposals for new or replacement infrastructure". Council's last Waste Assessment⁶ was undertaken in 2017.

22. Council also has responsibilities relating to solid waste under the Local Government Act (2002)⁷, the Litter Act (1979), the Health Act (1956), and the RMA. Council faces significant barriers to reduce waste in Auckland such as the low cost of landfilling compared to diversion costs and the reliance on central government to implement financial incentives/disincentives (e.g. waste levies, product stewardship schemes).
23. The council also only has direct influence over roughly 20% of waste generated in Auckland. It has a very limited influence over the roughly 80% waste that is commercially managed.
24. Most Aucklanders (and some submitters⁸) may be unaware that domestic waste collection makes up a small proportion of the total waste to landfill in Auckland. In 2016, Aucklanders sent 1.646 million tonnes of waste to landfill. Around 14% came from household kerbside collections, and 86% from commercial and other activities.⁹
25. In Auckland, the council contracts out the domestic waste collection and disposal services to private companies. This includes the collection of recycling, food scraps, and general waste. There are some mechanisms in council's collection contracts to dictate where the waste collected by council contractors (e.g. kerbside refuse) must be disposed of but this is largely done in agreement with the collection contractors based on a range of drivers including travel distances, existing disposal agreements etc. For non-council contracted services, the destination of the waste is decided upon by the collector. Auckland Council does not prescribe where waste is to be disposed of, except that it must be in a safe and sanitary manner and to an approved facility.

3.2. Current and planned waste reduction measures

26. The purpose of this section is to demonstrate that the council and central government have initiatives underway to reduce the need for landfills in the future.
27. One of the key obligations for local authorities under the Waste Minimisation Act (2008), is for local authorities to prepare a Waste Minimisation and Management Plan which is reviewed every six years.
28. Te Mahere Whakahaere me te Whakaiti Tukunga Para I Tāmaki Makaurau - Auckland's Waste Minimisation and Management Plan was approved in 2018. It sets out a zero waste future for Auckland¹⁰, targets for waste reduction, priority action areas,

⁶ Auckland Council. (2017). *Auckland's waste assessment 2017*.

<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/docs/wastemanagementplan/waste-assessment-2017.pdf>

⁷ Under the Local Government Act 2002, solid waste collection and disposal is identified as a core service that must be considered by a local authority.

⁸ For example, submitter #221 states that 40% of waste to landfill is made up of food waste. It is unclear where this statistic is sourced from. In fact, this figure most likely relates to food waste being 40% of household kerbside collections. Therefore domestic food waste makes up around 6% of the *total* waste.

⁹ Auckland Waste Management and Minimisation Plan (2018)

¹⁰ "Auckland aspires to be Zero Waste by 2040, taking care of people and the environment, and turning waste into resources"

and 103 specific actions. Further discussion on this plan is included in section 10.7.2 of this report.

29. Through the council's functions under the Waste Minimisation Act (2008) and the priority actions outlined in Auckland's Waste Management and Minimisation Plan, council is actively working to reduce the amount of waste to landfill. This includes measures to intercept waste before it goes to landfill through:
- Continuing the establishment of a resource recovery network across Auckland, which includes:
 - nine council-owned, community-run Community Recycling Centres with a further three in progress
 - 21 privately-owned diverted materials facilities handling materials such as steel, glass, paper, timber and tyres
 - Approximately 100 consented cleanfills and managed fills
 - three Materials Recovery Facilities handling recyclable materials from kerbside collections and some construction and demolition waste
 - eight organic waste treatment facilities¹¹
 - Introducing an integrated three-bin kerbside collection service for Auckland householders, including a new food-scrap collection.
 - Continuing to advocate for a national container return scheme for beverage containers and product stewardship schemes.
 - Continuing to advocate for an increase and expansion of the national waste levy.
 - Addressing three priority commercial waste streams – construction/demolition, organic wastes, and plastics.
30. Auckland Council has the most influence over the approximately 235,000 tonnes of domestic waste collected from households annually. In light of this, the council is rolling out a new domestic food scraps collection initiative that will see a reduction in that figure by an expected 50-75,000 tonnes per year.
31. The collected food scraps will be taken to an anaerobic digestion processing facility owned and operated by Ecogas Ltd where they will be turned into bio-fertiliser products and biogas. The biogas will be collected and used in a renewable generation plant to produce both heat and power. Once in operation, this Ecogas project will also have the potential to also process food scraps waste streams from the commercial sector.¹²
32. There are also several Auckland Council programmes in place to address the construction/demolition waste and commercial waste streams.¹³ However, it is acknowledged that the central government initiatives outlined below, that Auckland Council has been strongly advocating for, are expected to result in greater impacts in reducing waste.

3.2.1. Increase to the landfill levy

33. The national landfill levy was established in 2009 with the purpose being to:
- raise revenue to promote and achieve waste minimisation
 - recognise the cost of waste disposal on the environment, society and the economy by increasing the cost of waste disposal.

¹¹ Auckland Waste Management and Minimisation Plan (2018)

¹² Ecogas. (undated). <https://ourauckland.aucklandcouncil.govt.nz/media/31876/ecogas-overview-for-auckland-council.pdf>

¹³ Sections 10.3 and 10.4 of the Auckland Waste Management and Minimisation Plan (2018)

34. The Government has confirmed plans to increase and expand the national waste disposal levy to divert more material from landfill. The Auckland Council submitted in support of an increased waste levy as it is consistent with the key actions of the Auckland Waste Management and Minimisation Plan (2018).¹⁴
35. The Government plans to progressively increase the levy rate for landfills that take household waste and commercial and industrial waste over the next four years. The levy will increase from the current \$10 per tonne (set in 2009) to \$60 per tonne. The levy will also be expanded to cover additional landfill types, including construction and demolition fills which will be levied at differential rates (\$30 for construction and demolition, \$10 for managed fill and cleanfill). At present the waste levy only applies to Class 1 landfills that take household, industrial, and commercial waste, with no levy on the remaining almost 90% of landfills throughout the country.
36. The Government states that increasing and expanding the levy will help recognise the real costs of waste, make it fairer for everyone, and incentivise the reuse and recycling of materials rather than just ‘taking it to the tip’.¹⁵ The increase to the landfill levy will create a financial incentive for landfill users to switch to alternative methods for waste disposal (e.g. sorting waste for reusable materials, recycling, composting, etc). This could particularly relate to the large proportion of commercial waste currently going to landfill mentioned above.
37. While not directly related to the landfill levy, it is noted that the inclusion of waste disposal facilities in the emissions trading scheme (see section 10.7.4 of this report) also encourages the climate change impacts of landfill gas emissions to be reflected in waste disposal charges.

3.2.2. Regulated product stewardship schemes

38. Regulated product stewardship means regulations are used to increase incentives for circular resource use and the responsibilities of producers for managing end-of-life products. It puts more responsibility for a product’s life-cycle and waste management on manufacturers, importers, retailers and users, rather than on communities, councils, neighbourhoods, and nature.
39. As part of the wider plan to reduce the amount of rubbish ending up in landfills or polluting the environment, the Government has recently declared six priority products for regulated product stewardship under the Waste Minimisation Act (2008). They are:
 - plastic packaging
 - tyres
 - electrical and electronic products (e-waste)
 - agrichemicals and their containers
 - refrigerants
 - farm plastics¹⁶

¹⁴ Action 1: “Advocate for an increased waste levy”

¹⁵ Ministry for the Environment. (2020). *Waste and government*.
<https://www.mfe.govt.nz/waste/waste-and-government>

¹⁶ Ministry for the Environment. (2020). *Regulated product stewardship*.
<https://www.mfe.govt.nz/waste/product-stewardship-responsible-product-management/regulated-product-stewardship>

3.2.3. Other waste minimisation initiatives

40. A number of other Government initiatives to reduce waste are underway or planned, including:

- Investing in recycling infrastructure initiatives across the country. \$36.7 million of Government funding was announced in August 2020 for the upgrading of seven high-tech recycling plants from Northland to Canterbury to reduce the amount of recyclable materials going to landfills.¹⁷

This includes up to \$16.6 million for Auckland's recycling facilities to get new optical sorting equipment. This equipment will separate different grades of plastics, and separate cardboard from paper materials, to allow these materials to be more easily recycled into new products. The new equipment will increase Auckland's recycling processing capacity by 28%.¹⁸ Auckland Council is also receiving a further \$10.6m from the Government's Shovel Ready infrastructure project fund to improve facilities at existing Community Recycling Centres.

- Designing a national container return scheme for beverage bottles and cans, which is a project being coordinated by Auckland Council and Marlborough District Council with support from the Ministry for the Environment. The aim is to increase the recovery of single-use beverage containers to generate higher quality materials, increase recycling rates, reduce litter, and create new opportunities for employment, community participation, and fund-raising¹⁹.
- Working with councils and industry to standardise kerbside collection systems and consumer package labelling across the country, to make it easier for households and businesses to recycle.²⁰
- Consulting on a mandatory phase-out of specific hard-to-recycle plastics (made from PVC, polystyrene and oxy-degradable materials), along with seven single-use plastics items (including plastics straws, fruit stickers, drink-stirrers, produce bags). Consultation closes 4 November, 2020.

3.3. Auckland Council's involvement in the proposed Auckland Regional Landfill – Wayby Valley

41. Some submitters²¹ have assumed that Auckland Council is behind the proposed Auckland Regional Landfill in Wayby Valley.

42. The proposed Auckland Regional Landfill in Wayby Valley is **not** an Auckland Council project. The proposal is from a private company (WMNZ) and is being put forward on

¹⁷ Ministry for the Environment. (2020). *Waste and government*.

<https://www.mfe.govt.nz/waste/waste-and-government>

¹⁸ Our Auckland. (2020). *Funding welcomed for upgrade of Auckland recycling facilities*.

<https://ourauckland.aucklandcouncil.govt.nz/articles/news/2020/08/funding-welcomed-for-upgrade-of-auckland-recycling-facilities/>

¹⁹ Marlborough District Council. (undated). *Designing New Zealand's Container Scheme*.

<https://www.marlborough.govt.nz/services/recycling-and-resource-recovery/rubbish-and-recycling-projects/designing-new-zealands-container-return-scheme>

²⁰ Ministry for the Environment. (2020). *Waste and government*.

<https://www.mfe.govt.nz/waste/waste-and-government>

²¹ For example, submitter 149 states that WMNZ “operates in NZ through joint venture arrangements with local government for regional infrastructure projects. In this instance, the joint venture is with Auckland Council.”

a commercial basis with no involvement from Auckland Council. As stated earlier, the establishment and operation of landfills in New Zealand is not limited to local councils. Anyone can seek to establish a landfill through an application for resource consents or a private plan change request.

43. The council's only role in the proposed Auckland Regional Landfill in Wayby Valley is as the regulatory body for the private plan change and resource consenting processes under the RMA.
44. The council has not provided any agreement to WMNZ for domestic waste collection to be sent to a potential landfill in Wayby Valley. If a landfill is established at Wayby Valley, there is no guarantee that council (or other customers) will pay to use it.
45. It is worth noting that just because a landfill is established, it may not be filled with waste to the extent forecast by the operator. WMNZ is taking a commercial decision to attempt to establish a landfill with risks to the operation from local and central government shifts towards zero waste (potentially resulting in reduced demand for waste to landfill).
46. It is also important to note that WMNZ as the requestor of PC42 does not need to demonstrate a 'need' for a new landfill (just as a hotel developer would not have to prove there is a demand for a new hotel when seeking any approval under the RMA).

3.4. Alternative options to a landfill in Wayby Valley

47. Many submitters have sought that PC42 be declined and alternative waste management methods (to a landfill) be progressed. Other submitters said alternative sites should be found as the proposed site is fundamentally flawed for a landfill.
48. Section 3.4.3 below outlines the limited scope of this report to be able to consider alternatives. However, prior to that the next two sections of this report outline one of the main themes from submissions.

3.4.1. Alternatives to a landfill for managing waste

49. A large number of submissions requested that PC42 be declined because there are considered to be better options for dealing with Auckland's waste. Many argued that landfilling was 'old technology' and should not occur anymore.²² This section of the report is not a comprehensive assessment of alternatives to landfills. Rather, it briefly gives an overview of trends in waste management and the pros and cons of waste-to-energy plants (the mostly commonly referred to alternative in submissions).
50. Presently, across the globe around 37% of waste is disposed of in some form of a landfill. Open dumping accounts for about 31% of waste, 19% is recovered through recycling and composting, and 11% is incinerated for final disposal.²³
51. However, overseas trends appear to point towards landfills being slowly phased out in many countries. Throughout the OECD²⁴ more waste is being diverted from landfills and fed back into the economy through recovery and recycling. The share of municipal solid waste landfilled in the OECD area decreased from 61% to 42% between 1995

²² Refer to sections 14.1.4 and 14.16 for the assessment of these submissions.

²³ The World Bank. (undated). *Trends in solid waste management*.

https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html#:~:text=Globally%2C%20most%20waste%20is%20currently,with%20landfill%20gas%20collection%20systems.

²⁴ Organisation for Economic Co-operation and Development

and 2017, with some countries now practically no longer using landfills (e.g. Switzerland, Germany, Finland, Sweden, and Belgium).

52. In the USA, the disposal of waste to landfills decreased from 94% of the amount generated in 1960 to about 52% of the amount generated in 2017.²⁵
53. Since the 1990s, the number of active landfill sites in Britain has dropped from 1,500 to under 250. Britain's landfills have been closing due to their lack of financial viability and a lack of space for additional waste.²⁶ The key driver for landfill decline in Britain was the introduction of the Landfill Tax in 1996. This incentivised waste companies to reduce the waste sent to landfill as they were taxed per tonne of waste.²⁷
54. The main overseas alternatives to landfilling are recycling, composting, and energy recovery (using waste as fuel in energy and heat production). Using waste for energy recovery through waste-to-energy plants is covered in the section below.
55. Essentially, many developed countries are moving towards a "waste hierarchy" similar to that set out at Article 4 of the European Union Waste Framework Directive (2008/98/EC). It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill and incineration). It is noted that the diagram in Figure 15 - Waste Hierarchy diagram from Auckland Waste Management and Minimisation Plan (2018) in section 10.7.2 of this report shows that Auckland Waste Management and Minimisation Plan (2018) has a similar approach.



Figure 1 - "Waste hierarchy" diagram from the European Union Waste Framework Directive²⁸

Waste-to-energy plants

56. Across the submissions on PC42, the most often mentioned alternative to a landfill was a waste-to-energy plant. Waste-to-energy is a broad term used to describe a range of

²⁵ United States Environmental Protection Agency. (undated). *National overview: Facts and Figures on materials, wastes and recycling*. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#:~:text=In%202017%2C%20it%20was%20over,the%20amount%20generated%20in%202017.>

²⁶ Smith, L. & Sutherland, N. (2020) *Waste incineration facilities*.

<http://researchbriefings.files.parliament.uk/documents/CDP-2020-0029/CDP-2020-0029.pdf>

²⁷ Elliot, T. (2016). Landfill Tax in the United Kingdom. [online] Institute for European Environmental Policy, p.1. Available at: <https://ieep.eu/uploads/articles/attachments/e48ad1c2-dfe4-42a9-b51c-8fa8f6c30b1e/UK%20Landfill%20Tax%20final.pdf?v=63680923242> [Accessed 23 Sep. 2018].

²⁸ European Commission. (2020). *Directive 2008/98/EC on waste (Waste Framework Directive)*. <https://ec.europa.eu/environment/waste/framework/>

waste treatment processes that generate heat, fuel or electricity. Incineration, pyrolysis, gasification and anaerobic digestion are all examples of waste-to-energy technologies. Sometimes incineration plants are not designed to recover energy but rather are used to primarily reduce the volume of waste materials needing disposal.

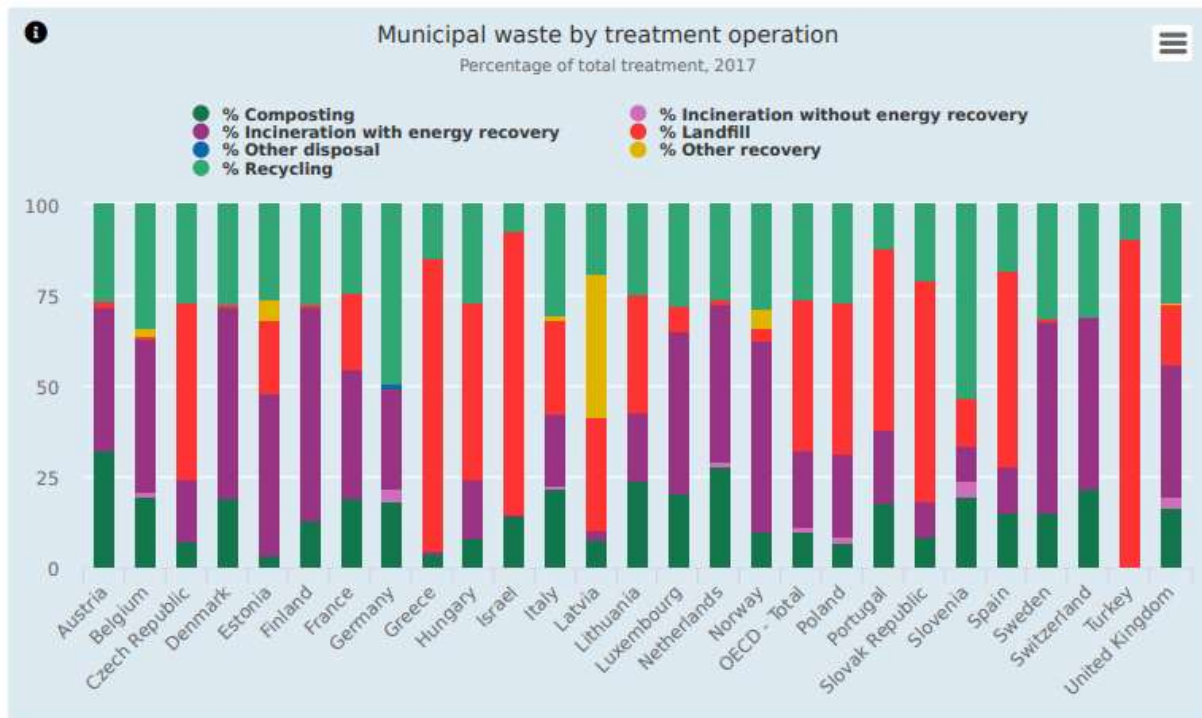


Figure 2 - Graph showing share of waste incineration in various OECD countries²⁹

57. As shown in Figure 2 above, incineration plays an important role alongside recycling in reducing the amount of waste going to landfills in many OECD countries.
58. In Sweden, less than 1 percent of waste ends up in landfills as Sweden burns about as much household waste as it recycles.³⁰ In the UK, while incineration only accounts for 6.1% of total waste, it accounts for 43.8% of municipal waste. In its December 2018 Resources and Waste Strategy the UK Government said that “Incineration currently plays a significant role in waste management in the UK, and the Government expects this to continue.”³¹
59. Waste-to-energy plants are emerging in developing countries in the Asia Pacific region, including China, Thailand, the Philippines, Indonesia and Myanmar. Waste-to-energy plants are considered to be a smart alternative to landfills, with less environmental impacts. They exploit a resource that would otherwise be wasted and can provide heating and electricity to households.³² They are generally popular where land

²⁹ OECD. (2020). *Environment at a glance: Climate Change*.

<https://www.oecd.org/environment/environment-at-a-glance/Circular-Economy-Waste-Materials-Archive-February-2020.pdf>

³⁰ European Commission. (2014). *Sweden recycling 99 percent of garbage, edging closer to zero-waste*. https://ec.europa.eu/environment/ecoap/news/sweden-recycling-99-percent-garbage-edging-closer-zero-waste_en

³¹ Smith, L. & Sutherland, N. (2020) *Waste incineration facilities*.

<http://researchbriefings.files.parliament.uk/documents/CDP-2020-0029/CDP-2020-0029.pdf>

³² The Swedish Institute. (2014). *Importing garbage for energy is good business for Sweden* [press release]. https://sweden.se/wp-content/uploads/2014/08/SI_WTE_Press_Release_140820.pdf

availability is limited, there is a demand for heating (cold climates), and where energy generation relies on non-renewable resources (i.e. fossil fuel).

60. The European Union has relied on waste incineration for the past few decades, but it is now moving away from waste-to-energy plants and is focusing on more ecologically acceptable solutions such as waste prevention, reuse and recycling as it shifts towards a circular economy.³³
61. Waste-to-energy can be a controversial form of waste management and new incineration facilities can face strong public opposition. Many groups oppose incineration because they argue it:
- gives rise to air pollution and nuisance concerns;³⁴
 - causes climate change³⁵;
 - is an inefficient way of generating energy;
 - wastes finite resources and destroys valuable materials that could be recycled into new products (recycling avoids having to make products from virgin materials);
 - is a barrier to the circular economy and depresses recycling as it doesn't provide an incentive for reducing waste (i.e. can potentially create lock-in effects that may lead to plant overcapacity and hamper efforts to reduce, reuse and recycle);³⁶
 - creates hazardous waste (incineration bottom ash);
 - destroys jobs in recycling and reuse centres; and³⁷
 - can reduce the volume of waste entering landfills – but does not remove the need for landfills.³⁸
62. Auckland Council is part of the C40 cities network and has signed an 'Advancing Towards Zero Waste declaration' commitment to:
- reduce the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015;
 - reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015, and,
 - increase the diversion rate away from landfill and incineration to at least 70% by 2030.

³³ United Nations Environment Programme. (undated). *Waste to energy: Considerations for informed decision-making – Summary for policymakers*.

https://wedocs.unep.org/bitstream/handle/20.500.11822/28388/WTESum.pdf?sequence=1&isAllowed=y&fbclid=IwAR1ArYY0UUNR0GakW5C9GssfCtwLmBz_hT-MF6irzxbtM1sX3KGblZbKZsk

³⁴ The United Kingdom Without Incineration Network. (undated). *Why oppose incineration*.

<https://ukwin.org.uk/oppose-incineration/>

³⁵ Incinerators convert waste to CO²

³⁶ Friends of the Earth. (undated). *All you need to know about waste and recycling*.

<https://friendsoftheearth.uk/natural-resources/all-you-need-know-about-waste-and-recycling>

³⁷ Zero Waste Network. (undated). *Waste energy to incineration*. <https://zerowaste.co.nz/waste-to-energy-incineration/>

³⁸ United Nations Environment Programme. (undated). *Waste to energy: Considerations for informed decision-making – Summary for policymakers*.

https://wedocs.unep.org/bitstream/handle/20.500.11822/28388/WTESum.pdf?sequence=1&isAllowed=y&fbclid=IwAR1ArYY0UUNR0GakW5C9GssfCtwLmBz_hT-MF6irzxbtM1sX3KGblZbKZsk

63. The C40 network views both incineration and landfills as being on the same bottom tier of the waste management hierarchy.³⁹ In addition I note that New Zealand's Zero Waste Network considers waste-to-energy incineration as an unacceptable option for waste management⁴⁰.
64. There are currently no large-scale waste-to-energy incineration plants operating in New Zealand. However, recently in reviewing the future of the southern landfill in Wellington the Wellington City Council received and assessed feedback on alternatives, including waste-to-energy plants. The assessment report concluded that an extension of the landfill was the most favourable option. Costs and legislative (RMA) factors were key in the less favourable scores for the evaluation of waste-to-energy plants.⁴¹
65. An economic assessment of waste-to-energy plants⁴² published in 2019 noted that there were a number of risks around waste-to-energy plants in New Zealand including the high volume of waste required to make a waste-to-energy plant economically viable.
66. The current Government has not supported the development of waste-to-energy plants in New Zealand. The Associate Environment Minister, Eugenie Sage, has highlighted their drawbacks and has stated that they "don't fit with the government's waste reduction plans"⁴³. Ms Sage has also said they are expensive and required consistently high volumes of waste as "feedstock" to make them viable⁴⁴. To meet this demand, material that would be far better off being recycled would end up being incinerated instead. She has said waste-to-energy plants released harmful gases, which effectively risked turning the atmosphere into a kind of gas landfill.⁴⁵
67. In July 2020 the Auckland Council's Environment and Climate Change Committee received a memo⁴⁶ providing an overview of the use of waste-to-energy technology in Auckland and its alignment with council plans. The memo stated that Auckland's Waste Management and Minimisation Plan (2018) is focused on shifting our entire waste management system to a circular economy that promotes waste to be designed out in the first instance. A circular economy can create jobs, opportunities for innovation, and eliminates or minimises the many negative impacts waste has on our natural environment.
68. Auckland's Waste Management and Minimisation Plan (2018) notes that while waste-to-energy treatments may be appropriate for some hard-to-manage individual or

³⁹ C40 Cities. (undated). *Advancing towards zero waste declaration*. <https://www.c40.org/other/zero-waste-declaration>

⁴⁰ Zero Waste Network. (undated). *Waste energy to incineration*. <https://zerowaste.co.nz/waste-to-energy-incineration/>

⁴¹ Tonkin & Taylor Ltd for Wellington City Council. *Residual Waste Management in Wellington City - Alternatives Assessment*. November 2019.

⁴² Robertson, N. (2019). *Waste to energy – The incineration option*.

<https://berl.co.nz/sites/default/files/2020-07/BERL%20Report%20WtE%20final%20July.pdf>

⁴³ Press release. <https://www.scoop.co.nz/stories/PO1811/S00189/ministers-door-closed-on-waste-to-energy-plants.htm>

⁴⁴ Note that Sweden imports waste from Europe for its waste-to-energy plants (https://ec.europa.eu/environment/ecoap/news/sweden-recycling-99-percent-garbage-edging-closer-zero-waste_en)

⁴⁵ Local Matters. (2020). *Waste-to-energy: Answer to the Dome Valley landfill blues?*.

<https://www.localmatters.co.nz/news/37014-wastetoenergy-answer-to-dome-valley-landfill-blues.html>

⁴⁶ Memo from Auckland Council Waste Solutions Team to the Environment and Climate Change Committee, *Waste to Energy in Tamaki Makaurau/Auckland*, July 2020

single-source waste streams (e.g. anaerobic digestion of food-scrap), a large-scale waste-to-energy facility processing mixed solid waste streams is less aligned with the plan. Specifically, the plan states:

“The role of energy from waste is being used in some larger cities around the world to reduce waste to landfill, particularly where there is limited land available for landfilling and energy costs are high. For example, in Stockholm, mixed waste is incinerated, and energy is recovered from the waste.

In Auckland, energy from waste may be appropriate for some hard-to-manage individual waste streams, such as timber, where there’s no other viable use and the material will cause harm in landfills. A range of issues and risks mean that large scale facilities for energy from waste, relying on a mixed waste stream, are not appropriate at this time.

Building a facility would be very expensive and, once built, would require a large, ongoing supply of waste to burn. This could undermine efforts to reduce, reuse and recycle waste at its highest and best value. It does not align with our Zero Waste vision.”⁴⁷

69. The memo went on to say that using mixed solid waste as fuel for heat or electricity generation reflects a linear model; taking natural resources, making products, using them, and disposing. This does not align with Auckland Council policy or the current government waste minimisation work programme.
70. The memo also stated that waste-to-energy projects are often viewed as beneficial overseas where the energy generated reduces a country’s reliance on energy generated by fossil fuels. However, in New Zealand this potential benefit is significantly negated as 85% of current electricity generation is from renewable sources.
71. The Auckland Council has also advocated for the Ministry for the Environment to provide national guidance on waste-to-energy proposals. There is currently no national guidance on this matter.

3.4.2. Alternative locations for a landfill

72. Another theme from submissions on PC42 is that there must be better sites for a landfill in Auckland. They consider that WMNZ’s site selection process is flawed in determining that the Wayby Valley site is the preferred option⁴⁸.
73. WMNZ’s site selection process is outlined in Appendix D (Site Selection Report) of the private plan change request. The report summarises the process involved in considering alternative sites. However, the report does not identify the other sites considered. WMNZ state that this is due to commercial sensitivity and the potential impact on current landowners of the other sites, as the vast majority would be unaware that their land was considered, potentially causing significant uncertainty for them if this information was made public.
74. However, WMNZ state that the Site Selection Report is intended to demonstrate that significant analysis occurred prior to the selection of the Wayby Valley site for the proposed Auckland Regional Landfill. The process began in 2007 and upwards of 28 sites were looked at for consideration. These were slowly whittled down over the various iterations, with the final ranking matrix from the 2014 report including a ranking of 9 potential sites.

⁴⁷ Auckland Waste Management and Minimisation Plan (2018)

⁴⁸ E.g. submissions 192.2 and 407.1

75. The factors considered in WMNZ's site selection process and their ranking is outlined below:
- 1 *Primary constraint – any potential site must be located within or accessible from a corridor 2 to 5 km wide aligned along state highway routes north and north-west of Auckland and within an acceptable haulage distance north and north-west of the harbour bridge. Any land area outside these corridors has not been considered due to known consenting issues related to truck traffic and community disturbance on secondary roads.*
 - 2 *Secondary constraints (weighting = 3 to 5):*
 - *Site size / development potential (weighting 4)*
 - *Buffer availability (weighting 5)*
 - *Land title complexity / number of owners (weighting 3)*
 - *Specific PAUP (as it was at the time of the assessment) constraints such as proximity to or impingement on a listed site of cultural significance, an area of outstanding natural landscape (ONL), a significant ecological area (SEA) and water courses (weighting 3)*
 - 3 *Tertiary constraints (weighting = 1 or 2):*
 - *Geology / natural containment / hydrogeology (weighting 2)*
 - *Topography (weighting 2)*
 - *Engineering complexity (weighting 2)*
 - *General planning constraints (weighting 1)*
76. While the site selection factors have been made public, the other sites that WMNZ assessed remain confidential. This does make it difficult to assess whether the process was done accurately (i.e. were scores given on a consistent basis).
77. WMNZ state that the constraint factors they used (listed above) are consistent with the Waste Management Institute New Zealand Technical Guidelines for Disposal to Land (2018). This is an industry group and they prepared the guidelines with funding from the Ministry for the Environment. I note these guidelines have superseded the Centre for Advanced Engineering Landfill Guidelines (2000) and the Waste Management Institute New Zealand Technical Guidelines for Disposal to Land (2016).
78. The 2018 guidelines state that the location is the key determinant of the extent to which a landfill poses an environmental risk. Where an engineered liner system is used the ability of the underlying materials to keep discharges from the site need to be considered carefully, as the liner will have a finite lifetime.
79. The guidelines are not intended to be a detailed technical manual to be strictly followed. Rather they acknowledge that each site selection process will be different – for example locating a site with good natural containment is a major technical advantage, but in some instances such a site benefit may be outweighed by constraints related to access or other community considerations, in particular the availability of buffer.
80. The guidelines note that in an initial desktop study the following factors should be considered:

Geology

This is an important consideration to ensure containment of leachate in the long term through the natural containment provided, should an engineered containment system ever fail.

Hydrogeology

This is important to protect groundwater resources and to understand rate of discharge of contaminants which may enter groundwater. It is generally undesirable to site a landfill in areas overlying significant aquifers used for drinking water.

Surface Hydrology

There are risks of surface water pollution if landfills are sited in close proximity to waterways. The potential impact of water pollution is greater in those waterways used for drinking water or aquaculture.

Site stability

This should be considered from both the short- and long-term perspectives. It is generally undesirable to site a landfill in areas subject to instability, except where the instability is of a shallow or surface nature that can be overcome.

Environmentally Sensitive

Generally avoid areas where sensitive natural ecosystems would be adversely affected such as Significant areas of native bush or wildlife habitat including areas with regionally or nationally significant flora or fauna and any areas where release of contaminants from the site could adversely affect fish/wildlife/aquatic resources

Compatibility with Surrounding Land Uses

Ensuring adequate separation distances and/or buffer areas can help to preserve the amenity of surrounding areas and avoid unwanted impacts from landfill operations. The requirement for, and extent of, buffer areas should be determined on a site-specific basis. Where possible, the buffer area should be controlled by the landfill operator

Topography

This can reduce or increase the potential for nuisance effects (odour, noise, litter and dust) and visual effects on neighbouring properties.

Climatic Conditions

Landfills in high rainfall areas are generally undesirable and require greater attention to drainage. Higher sunshine areas and north facing slopes have increased evaporation, reducing infiltration. Natural shelter from winds will reduce windblown waste and dust. However, calm conditions are when odour may become an issue.

Access and Traffic

Landfills can generate significant flows of heavy vehicle traffic. Site access should therefore be as close as possible to main feeder routes.

Leachate Management

Landfill siting should take into account the potential methods of leachate treatment and disposal and its effect on site neighbours.

Landfill Gas Management

The potential for landfill gas migration in surrounding sub-strata needs to be considered with respect to containment proposals.

Cultural Issues

Areas of cultural significance should be avoided. Engagement with local iwi is the best way to ensure that all known sites of cultural significance are identified.

81. The guidelines state that their governing approach is to assist the selection of landfill sites which provide an appropriate level of natural containment, through their inherent geological, hydrogeological and topographical characteristics. However, other features of a site are also important. These include its ability to be accessed in a way that causes minimum disruption to the community and the ability to provide buffer to neighbours surrounding the site. These key physical features need to be considered together with the engineered containment options available for any Class 1 (municipal) landfill. The guidelines also note that it is unlikely that any site will meet all criteria. Therefore, the assessment of the suitability of a site for a landfill becomes a balance of trade-offs.
82. As mentioned above, without further detail on WMNZ's site selection process it is difficult to fully determine whether it followed industry best practice. WMNZ's weighting of the criteria seems to skew the preferred sites towards those that have good access and a large buffer. I note that these are not what the industry guidelines suggest as the primary technical considerations – geology, hydrogeology, surface hydrogeology, and site stability.
83. However, from the information that is available, it is my view that WMNZ site selection process seems to have generally assessed the factors outlined in the industry guidelines. While there are aspects of the Wayby Valley site that do not seem to be a good fit for a landfill such as areas of high environmental values and a high level of rainfall, there are other aspects that do make it suitable such as a very large buffer area, direct access to SH1, and proximity to the motorway network (under construction). Overall, from the site selection information I have reviewed and considering the views of the council specialists, I do not consider the Wayby Valley site to be fundamentally flawed for a landfill.
84. I consider it would be helpful if WMNZ presented evidence at the hearing to further explain their site selection process.

3.4.3. Ability to consider 'alternatives' in a private plan change process

85. The above sections demonstrate the desire of many submitters to see alternative options considered to the proposed Auckland Regional Landfill precinct. The alternatives include different sites for a landfill as well as completely changing the way that waste is managed.
86. However, in assessing PC42, the council's scope is limited in what 'alternatives' it can require the applicant to consider. Section 32 of the RMA outlines the process for testing plan changes. Section 32(1) is reproduced below and the italicised text highlights where it refers to a potential assessment of alternatives.

32 Requirements for preparing and publishing evaluation reports

- (1) An evaluation report required under this Act must—
 - (a) examine the extent to which the objectives of the proposal being evaluated are *the most appropriate way to achieve the purpose of this Act*; and
 - (b) examine whether the provisions in the proposal are *the most appropriate way to achieve the objectives* by—
 - (i) *identifying other reasonably practicable options for achieving the objectives*; and

- (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
- (iii) summarising the reasons for deciding on the provisions; and
- (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.

‘Alternatives’ assessment under s32(1)(a)

87. The first assessment of ‘alternatives’ requirement is under s32(1)(a) to examine the extent to which the objectives of the proposal are the *most appropriate way* to achieve the purpose of the RMA⁴⁹.
88. In this case, the RMA defines the ‘proposal’ under s32(6) as being the proposed private plan change request (PC42). Therefore, the proposal is to introduce the Auckland Regional Landfill precinct into the Unitary Plan. I understand the RMA to say that the proposal is not the broad matter of ‘where to locate a landfill in Auckland’. Nor is it the wider matter of ‘how to dispose of Auckland’s waste’.
89. The RMA defines ‘objectives’ in s32(6) as being the proposed Auckland Regional Landfill precinct objectives 1-6 (section 1617.2). These objectives specifically relate to the potential establishment of a landfill within the precinct. The objectives are therefore not ‘to find a suitable location for a landfill’ nor ‘to effectively manage Auckland’s waste’.
90. The definition of the proposal and the objectives therefore limits the range of other potential options that the council can require the applicant to assess. WMNZ’s proposal is to introduce the Auckland Regional Landfill precinct into the Unitary Plan and that is what must be assessed. Alternative waste management options (e.g. waste-to-energy plants) are not within the scope of council’s recommendation on PC42. The council does not have the authority to recommend a different project to the one applied for. In the same way the council could not respond to a private plan change request to enable an office building with a recommendation to require the staff to work from home instead.
91. In section 6.1 of the private plan change request, the applicant has provided its assessment under s32(1)(a) and concludes that the objectives of PC42 are the most appropriate way to meet the purpose of the RMA⁵⁰.

‘Alternatives’ assessment under s32(1)(b)(i)

92. The second assessment of ‘alternatives’ required by s32 is to examine whether the provisions (the policies, rules or other methods that implement the objectives) are the *most appropriate way* to achieve the objectives. This is to be done by *identifying other reasonably practicable options* for achieving the objectives.
93. Many submitters have requested that WMNZ look at alternative sites. However, while the proposed site can be assessed as to whether it is suitable for a landfill, the RMA does not extend the ability for the council to require the applicant to demonstrate that there are no alternative sites that would be better placed for a landfill. The courts have defined ‘appropriateness’ as meaning ‘suitable’ not ‘superior’⁵¹.

⁴⁹ Ministry for the Environment. 2017. *A guide to section 32 of the Resource Management Act: Incorporating changes as a result of the Resource Legislation Amendment Act 2017*. Wellington: Ministry for the Environment.

⁵⁰ This report addresses the s32 in section 15.

⁵¹ *Rational Transport Society Inc v New Zealand Transport Agency* [2012] NZRMA 298.

94. *Brown v Dunedin City Council*⁵² is the principal authority for a long-held proposition that there is no requirement for the consideration of alternative sites when dealing with a site-specific plan change application. However, in *Environmental Defence Soc Inc v The New Zealand King Salmon Co Ltd*⁵³, the Court found that there may be instances where a decision-maker must consider possible alternative sites when determining a private plan change relating to the applicant's own land, particularly where the private plan change involves the use of part of the public domain for a private commercial purpose (as was the case in *King Salmon*).⁵⁴
95. In this case, WMNZ is not proposing to use public land for the proposal. However, as this is a site-specific private plan change relating to the applicant's own land, the identification of alternative sites could be required to demonstrate that *other reasonably practicable options* have been addressed.
96. In this respect, WMNZ appear to have considered alternative sites as part of their s32 analysis as demonstrated in the Site Selection Report in Appendix D. The Site Selection Report is brief and while it outlines the criteria to assess sites, the report does not specifically mention where the other sites considered for the proposed landfill are located. WMNZ state that this is for commercial sensitivity issues as well as not wanting to alarm communities where they may have been considering locating a landfill.
97. While this is understandable, it does make it difficult to assess the validity of the site selection process (i.e. have the criteria been applied correctly to different sites?). It would be helpful and provide more transparency if WMNZ were able to provide further details around the site selection process as part of their evidence for the hearing.
98. However, it is clear that there is no statutory requirement to fully assess the benefits and costs of all practicable options for provisions.⁵⁵ All that is required is that the other reasonably practicable options are identified. There is no corresponding explicit requirement that the efficiency and effectiveness of those other options be examined and compared. Section 32(1)(b)(ii) only requires that the efficiency and effectiveness of "the provisions" be assessed. "Provisions" do not include alternative options.⁵⁶
99. Therefore, it is clear that WMNZ are not legally required to show the full workings of their site selection process. They just need to demonstrate that other options have been identified.
100. The applicant has provided an assessment under s32(1)(b)(i) in section 6.2 and Appendix C of the private plan change request. This assessment focuses on other options within the realm of the Unitary Plan tools for achieving the objectives. The options assessed by the applicant include to do nothing, to introduce a precinct, to introduce a Special Purpose Zone, and to make changes to the zone and Auckland-wide provisions⁵⁷.

⁵² *Brown v Dunedin City Council* [2003] NZRMA 420 (HC)

⁵³ *Environmental Defence Soc Inc v The New Zealand King Salmon Co Ltd* [2014] NZSC 38

⁵⁴ Heather Ash and Maree Baker-Galloway. *Section 32 of the RMA: Resource Management Amendment Act 2013 Legal Overview* (2017)

⁵⁵ Ministry for the Environment, 2013, A guide to s 32 of the RMA 1991; Incorporating changes as a result of the Resource Management Amendment Act 2013, Interim Guidance, Wellington, p33.

⁵⁶ Heather Ash and Maree Baker-Galloway. *Section 32 of the RMA: Resource Management Amendment Act 2013 Legal Overview* (2017)

⁵⁷ This report addresses the s32 in section 15.

4. SITE DESCRIPTION

101. Section 2.3 of the applicant's private plan change request describes the various attributes of the proposed precinct site. A summary of the precinct location and description is outlined below.
102. The proposed Auckland Regional Landfill precinct is located in Wayby Valley, approximately 70km north of Auckland. I note that the site of the proposed precinct is often referred to by submitters as being in the Dome Valley. Essentially, the precinct area is so large that it sits in both valleys. However, Sub-precinct A in 'Valley 1' (where a potential landfill would be located), is separated from the Dome Valley by a ridge. Valley 1 faces north and opens out into the Wayby Valley.

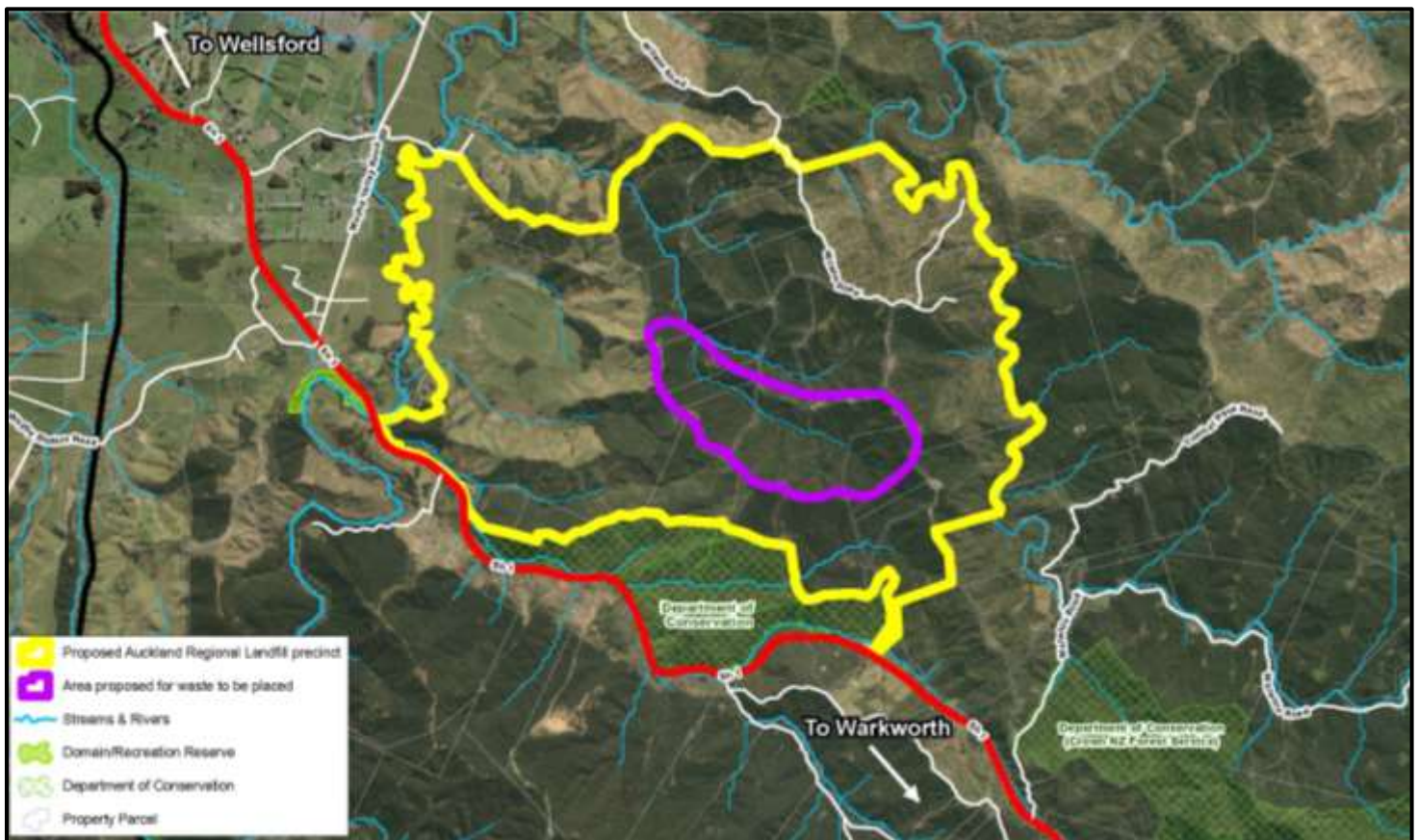


Figure 3 – Location plan of the proposed Auckland Regional Landfill precinct

103. State Highway 1 runs past the site to the south west, and the site is approximately 6km southeast of Wellsford and 13km northwest of Warkworth. The proposed precinct covers an area of approximately 1,020ha of land comprising a number of legal titles purchased by WMNZ. A location map of the precinct is shown in Figure 3.
104. The proposed precinct contains varying topography. In general, the western side is dominated by the relatively flat pastoral farmland of Springhill Farm, sloping gently and then more steeply up as it moves eastward away from the Hōteoro River. The eastern side is characterised by ridges and a number of gullies.
105. The proposed precinct location contains a number of intermittent and permanent streams and tributaries including the Waiwhiu Stream and Waiteraire Stream. All

watercourses within the proposed precinct location are tributaries of the Hōteu River. Groundwater within the proposed precinct is generally free from contamination and is akin to naturally occurring conditions.

106. The land within the proposed precinct comprises a mixture of land use typologies. The proposed precinct comprises a mix of land uses being:
 - Exotic forest covering approximately 729ha of the proposed precinct, predominately on the eastern side of the precinct;
 - Pasture covering approximately 213ha (the working Springhill Farm) and dominating the western side of the precinct; and
 - Native habitats covering approximately 135ha of the proposed precinct including 11 distinct native habitat types.
107. Within the Springhill Farm area there are is an existing dwelling as well as existing farm utility buildings and sheds. There is also a working airstrip, with associated hangar buildings.
108. The native vegetation on the site is in generally considered to be of high ecological value with areas of significance including mature kahikatea and pukatea forest, taraire and tawa, podocarp forest and kauri, podocarp and broadleaved forest.
109. A range of native fauna inhabit the site including bats, birds, lizards, frogs and invertebrates. Of particular note is the likely presence of two species classified as nationally threatened (long-tailed bat and the Australian bittern) and sizeable populations of three 'At Risk' species (fernbird, spotless crane, and Hochstetter's frog).
110. The plantation forestry area, which dominates the eastern side of the precinct, is part of a larger contiguous forestry area known as the "Dome Forest". The forestry within the precinct and in the surrounding plantation forestry is at a similar stage of harvest cycle, being 15 to 25 year-old exotic pine forest that is within its third harvest cycle.
111. To the west and north-west of the proposed precinct the topography flattens out, with rolling hills and land uses that are predominantly agricultural. Land use is largely dairy, beef and sheep farms, and lifestyle blocks. There are also a number of small businesses operating from properties in the surrounding area.
112. Approximately 3.5km northwest of the boundary of the proposed precinct is the town centre of Wellsford, while Warkworth is on the southern side of the Dome Forest
113. There are significant tracts of native bush within the wider area, including the Department of Conservation owned Sunnybrook Scenic Reserve and the Dome Forest Stewardship Area. The Sunnybrook Scenic Reserve is located south of the proposed precinct, adjoining State Highway 1. Within the south-eastern extent of the Dome Forest, Te Araroa Trail and Dome Forest Walkway are popular walking routes. These are located at least 3km from the area proposed for waste to be placed.
114. Within the proposed precinct there are a number of private roads that are predominantly used for the forestry operation. There are also a number of unformed legal roads across the precinct, some of which coincide in part with the formed private roads.
115. State Highway 1 adjoins the proposed precinct to the south west and is the key national transport route between Auckland and Whangarei. This highway passes through the

Dome Valley between the townships of Warkworth and Wellsford. Within the Dome Valley it is a two-way, two-lane road with two northbound and one southbound passing lane opportunities between Warkworth and Wellsford.

116. The speed limit has been reduced here to 80 km/h due to a disproportionately high number of crashes that occur in the area. The New Zealand Transport Agency ('**NZTA**') is currently undertaking safety improvements on a 15km stretch of State Highway 1 through the Dome Valley, to address known safety issues. This work is scheduled for completion prior to the proposed landfill operation being established.
117. NZTA currently has a proposal to realign State Highway 1 between Warkworth and Wellsford, which is the second stage of Ara Tūhono Pūhoi to Wellsford project. This project is likely to ultimately extend just north of Te Hana. Stage one, between Pūhoi and Warkworth, is currently under construction, with an estimated completion date of late 2021.
118. The indicative alignment of the Warkworth to Wellsford section shows the route cutting across the south-western corner of the proposed precinct. NZTA has lodged a Notice of Requirement in order to secure route protection and a decision on this is likely by the end of 2020 or early 2021.

5. EXISTING PLAN PROVISIONS

119. The Unitary Plan zoning over the proposed precinct is Rural Production. Additionally, the site contains a number of controls and overlays in the AUP including those for Significant Ecological Areas and Natural Stream Management Areas. A number of designations are also adjacent to the subject land including the designations for SH1, the gas and petroleum pipelines, and the Wellsford Water Treatment Plant.
120. The purpose of the Rural Production Zone is to provide for the use and development of land for rural production activities and rural industries and services, while maintaining rural character and amenity values. Table H19.8.1 provides for a Landfill (A67) as a non-complying activity in the Rural Production zone. It is noted that there are no zones in the Unitary Plan that provide any less onerous activity status for landfills.
121. There are a range of Auckland-wide provisions that apply to the site, but *Chapter E13 – Cleanfills, managed fills and landfills* specifically deals with landfills. This chapter states that landfills support the use of land and the disposal of waste generated by residential, commercial, industrial and rural activities in Auckland. Landfills involve the disposal of material not suitable for diversion or cleanfills and managed fills. Table E13.4.1 provides for discharges from new landfills (A9) as a non-complying activity.

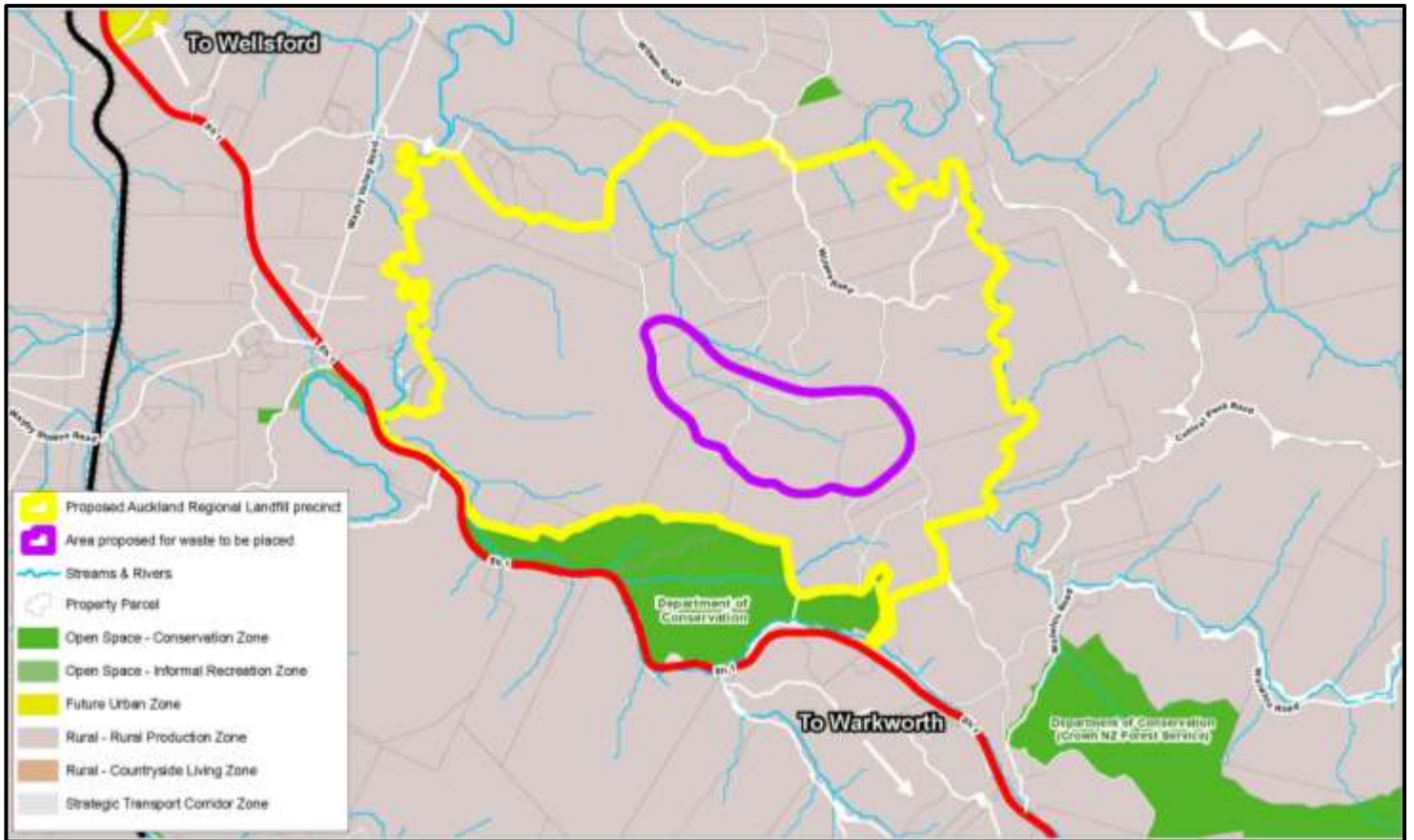


Figure 4 - Existing zoning of Wayby Valley area

122. The existing zoning of the land subject to the precinct in this private plan change request is shown in Figure 1.
123. A number of Unitary Plan overlays apply to parts of the site and they are outlined below:
- Significant Ecological Areas (SEAs)
The following terrestrial SEAs are located within the proposed precinct: SEA_T_6635; SEA_T_910; SEA_T_909; SEA_T_909c; SEA_T_6456; SEA_T_6850; SEA_T_765; SEA_T_683; SEA_T_5541; SEA_T_6634.
 - Wetland Management Areas Overlay
The following wetlands are located within the proposed precinct: 159 and 164 (Wayby Wetland) (Ecological values: Raupo, kahikatea swamp, threatened birds)
 - Outstanding Natural Landscape
Area 32: Dome Forest (Hill country Wild and Cultured nature: Sizeable area of steeply dissected hill country containing a sequence of prominent ridges that are covered in mature remnant forest)
 - Natural Steam Management Areas
124. Two Unitary Plan controls apply to the site or part of the site and they are outlined below:

- Emergency Management Area Control – New Zealand Refining Pipeline
 - Macroinvertebrate Community Index control
No rules currently apply to this control but objectives and policies in Chapter E1 apply
125. A number of Unitary Plan designations apply to parts of the site and they are outlined below:
- State Highway 1: Puhoi to Topuni, New Zealand Transport Agency (6763)
 - Taupaki to Topuni Gas Pipeline, First Gas Limited (9101)
 - Petroleum Pipeline - Rural Section, New Zealand Refining Company Ltd (6500)
 - A Notice of Requirement for the Warkworth to Wellsford Project (proposed motorway)
126. A number of other Unitary Plan designations are in the vicinity of the site and they are outlined below:
- North Auckland Railway Line from Portage Road, Otahuhu to Ross Road, Topuri, KiwiRail (6300)
 - Substation, Vector Ltd (8890)
 - Wastewater Purposes - Sewage Treatment and Disposal in Wellsford, Watercare Services Ltd (9337)
 - Wastewater Purposes - Exclusion of dwellings in area surrounding Wellsford Sewage Treatment Plant, Watercare Services Ltd (9361)
 - Water Supply Purposes - Wellsford Water Treatment Plant, Watercare Services Ltd (9335)
127. *Appendix 21 Treaty settlement legislation – Statutory acknowledgements* of the Unitary Plan includes a number of statutory acknowledgement areas relevant to PC42:
- Ngāti Manuhiri: Tohitohi o Reipae and the Hōteu River
 - Ngāti Whātua o Kaipara: Southern part of the Kaipara Harbour
 - Te Uri o Hau : Kaipara Harbour Coastal Area
128. The overlays, controls, and designations mentioned above are shown on Figure 5 - Auckland Unitary Plan overlays, controls, and designations in relation to the proposed Auckland Regional Landfill precinct below.

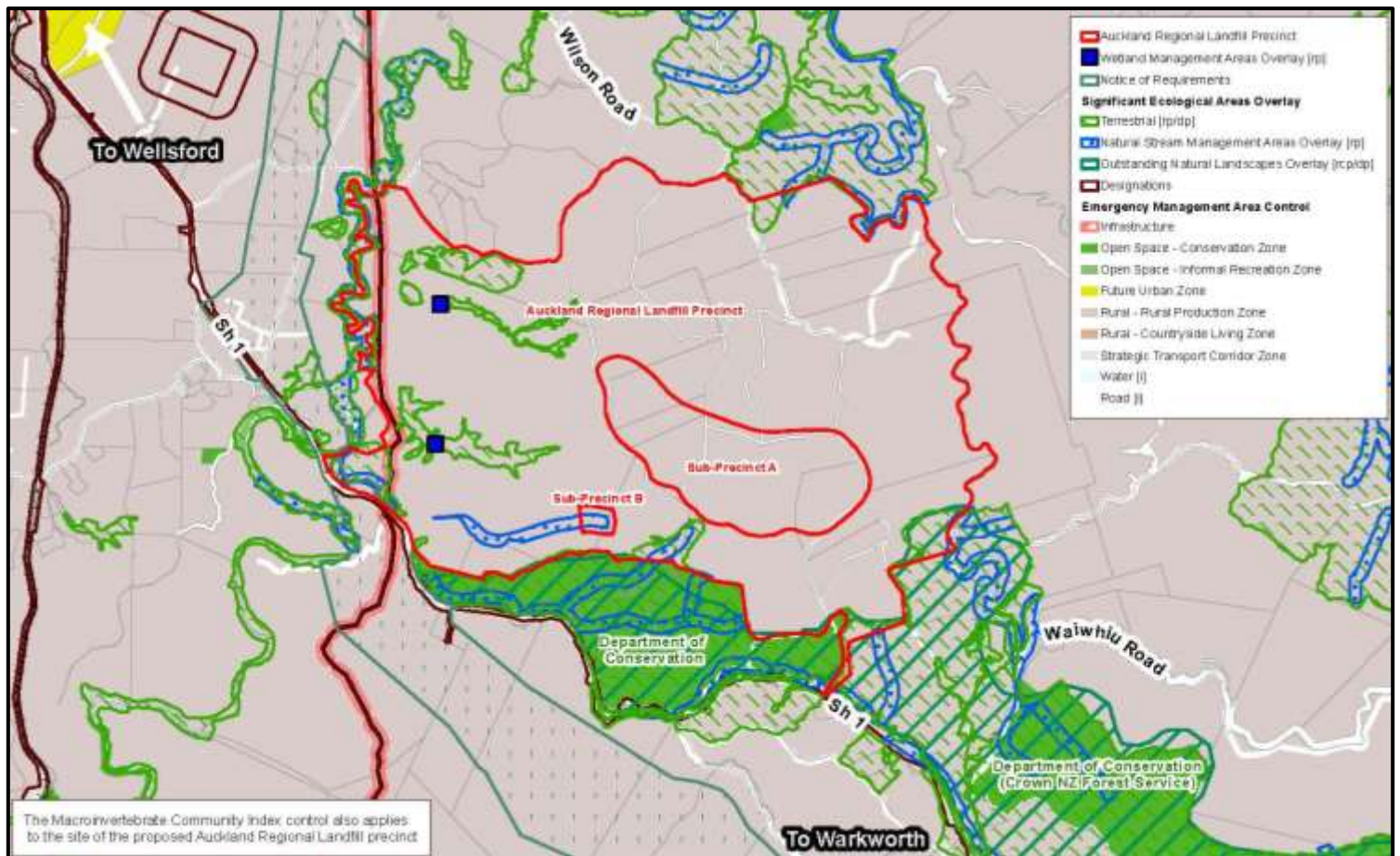


Figure 5 - Auckland Unitary Plan overlays, controls, and designations in relation to the proposed Auckland Regional Landfill precinct

6. PROPOSED PLAN CHANGE PROVISIONS

129. The proposed plan change is well summarised in section 3.1 of WMNZ's Assessment of Environmental Effects ('**AEE**') and Section 32 Analysis. Briefly, it seeks to introduce a new Auckland Regional Landfill precinct into the Unitary Plan. This is proposed to cover around 1,020ha in Wayby Valley and includes objectives, policies, and rules (both regional and district) specific to the precinct.

6.1. What is a precinct?

130. Precincts are a method in the Unitary Plan to enable local differences to be recognised. A precinct does this by providing detailed provisions for specific sites. A precinct is identified on the planning maps with a red boundary that sits on top of the underlying zoning.

131. These site-specific provisions work in conjunction with the underlying zone, Auckland-wide provisions, and overlays. The precinct simply adds provisions to a specific site that vary the outcomes sought by the underlying zone or Auckland-wide provisions. The precinct provisions can be more restrictive or more enabling.

132. In certain limited circumstances the rules in a precinct vary the controls of an overlay, either by being more restrictive or more enabling. However, the general approach is that overlays take precedence over a precinct.

133. Where a precinct specifically amends the activity status compared to the underlying zoning or Auckland-wide provisions, the precinct takes precedence. Where a precinct is silent on any activity the underlying zone and Auckland-wide provisions would continue to apply. This is a crucial point to reiterate – *precincts are built on the underlying provisions; the zones and Auckland-wide provisions*. Any activities not provided for in the precinct will be regulated by the underlying zones or Auckland-wide controls.⁵⁸
134. Precinct provisions are located in Chapter I of the Unitary Plan and they are grouped according to their location as Auckland-wide, central, north, west and south.⁵⁹

6.2. The proposed Auckland Regional Landfill precinct

135. The private plan change request describes the proposed Auckland Regional Landfill precinct as follows:

“Two sub-precincts are proposed: Sub-precinct A, which identifies the area where waste will be placed within the landfill; and Sub-precinct B, which identifies an area where works in the [Natural Stream Management Area overlay] NSMA are classified as discretionary rather than non-complying...

*...
The proposed precinct includes 6 objectives and 6 policies. The objectives and policies are intended to enable establishment and operation of a landfill within the precinct, whilst requiring effects to be appropriately managed to the extent practicable...*

*...
The activity table makes landfill activities discretionary, rather than non-complying within the precinct. The proposed precinct has intentionally retained a discretionary status for new landfills to allow for Works within the NSMA in Sub-precinct B would be discretionary, whereas works in an NSMA outside of Sub-precinct B would remain non-complying...*

*...
Discharges from an existing, legally authorised landfill (i.e. re-consenting the ongoing operation of activities within the precinct) are proposed to be a restricted discretionary activity. Many activities, such as stormwater, industrial and trade activities, discharges from closed landfills, and earthworks, will continue to be regulated by the Auckland-wide provisions in the AUP, rather than by the precinct provisions...*

*...
The precinct includes standards for restricted discretionary and discretionary activities. These standards limit the placement of waste to Sub-precinct A, require installation of an appropriate lining system, require no offensive or objectionable odour at the Precinct boundary, and restrict works within identified SEAs, WMAs and NSMAs, and limits the maximum airspace volume of the landfill...*

*...
Assessment criteria and matters of discretion have been included for the proposed restricted discretionary activities. These are broadly consistent with the assessment criteria and matters of discretion for other discharges in the AUP...”*

136. The proposed Auckland Regional Landfill precinct provisions are generally in addition to other provisions in the Unitary Plan (i.e. the Rural Production zone, the Auckland-wide provisions, and any overlay provisions). In particular the private plan change request notes that the precinct provisions do not replace the rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33, or for erosion and sediment control in Chapters E11 and E12.

⁵⁸ Refer to C1.6(4) of the Unitary Plan.

⁵⁹ Refer to section A1.6.5 of the Unitary Plan.

137. The proposed precinct includes text stating that the objectives and policies in the precinct are in addition to the overlay, Auckland-wide and zone objectives and policies, except where there is conflict, in which case the precinct objectives and policies take precedence.
138. In terms of activities, the proposed precinct includes text above Activity table I617.4.1 stating that the provisions in any relevant overlays, Auckland-wide provisions and the zones apply unless otherwise specified below. A footnote states that “Specifically, the rules in this table are intended to replace E3.4.1 (A49) E13.4.1 (A9), E14.4.1 (A160), and H19.8.1 (A67), and are intended to apply instead of any plan rules which classify landfills or associated activities as non-complying.”
139. The precinct includes text above Activity table I617.4.2 stating that the activity table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed. A footnote states “Specifically, the rules in this table are intended to replace E3.4.1 (A33) and E3.4.1 (A49) within the sub-precinct.”
140. The way the Auckland Regional Landfill precinct would appear in the Unitary Plan maps (if approved) is shown below in Figure 6.

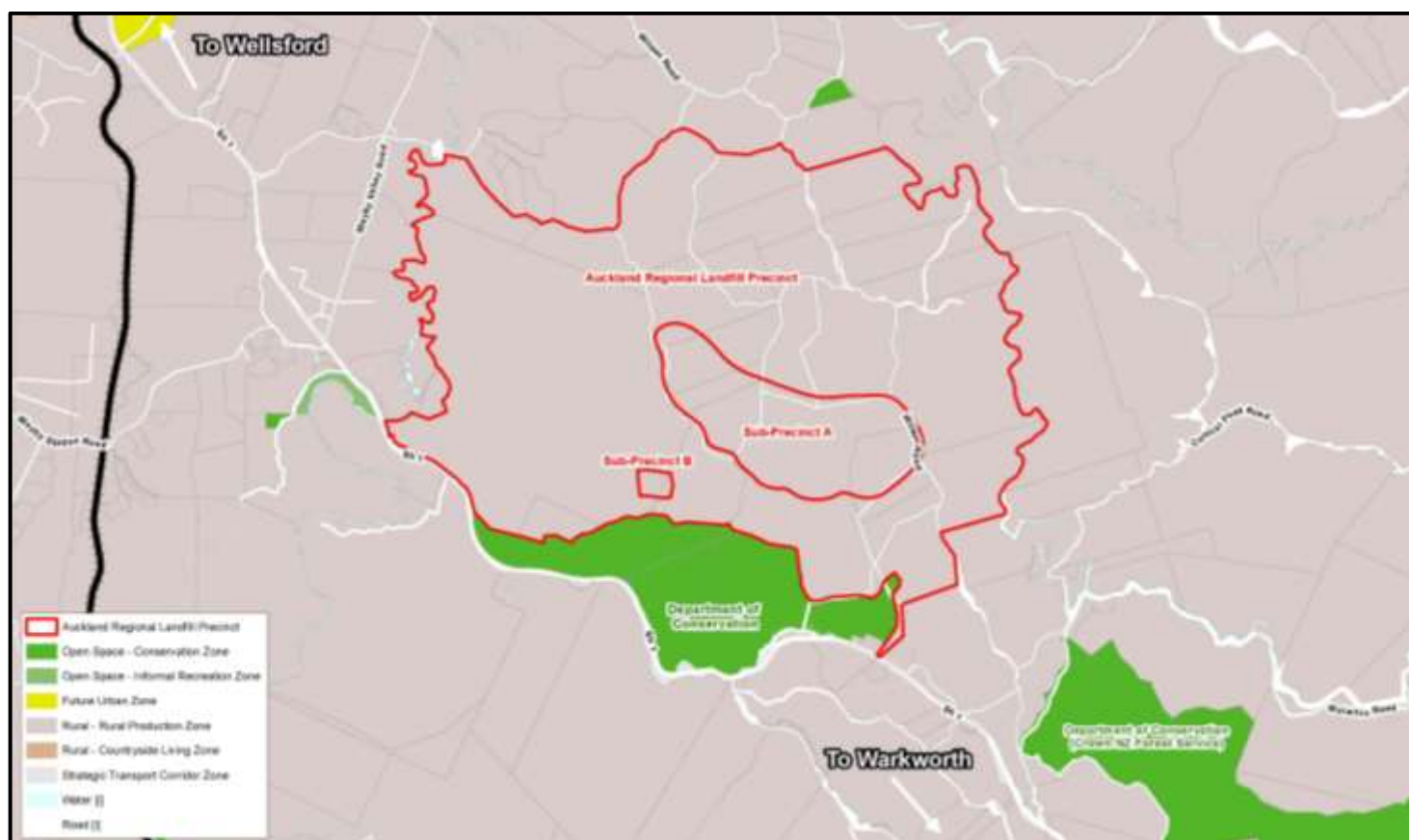


Figure 6 - The proposed Auckland Regional Landfill precinct as it would appear on the Unitary Plan maps (if approved)

7. CLAUSE 23 REQUESTS FOR FURTHER INFORMATION

141. Prior to accepting the private plan change request giving rise to PC42, a range of further information was sought from the requestor in accordance with Clause 23 of the RMA. The purpose of the further information requests was to enable council to better understand the effects of PC42 on the environment and the ways in which adverse effects may be mitigated.
142. On 30 September 2019 further information was requested from the applicant concerning Air quality, Environmental risk and waste acceptance, Historic heritage, Landfill engineering, groundwater, and surface water takes, Terrestrial biodiversity and freshwater ecology, Transport, Health, Stormwater, Noise, Geotechnical, Economic, Land disturbance, and Planning. WMNZ responded on 15 November 2019 and on 20 December 2019 the council requested further information on Transport, Health, Healthy Waters, Landfill engineering, groundwater, and surface water takes, and Environmental risk and waste acceptance.
143. The council reviewed this information and requested further information on 24 December 2019. Further information was received from WMNZ on 3 February 2020. The council reviewed this information and requested further information on Environmental Risk. WMNZ supplied this on 4 March 2020. At this point council's experts confirmed that the level of information was sufficient to continue processing the request.

8. NOTIFICATION AND SUBMISSIONS PERIOD

144. The private plan change request was accepted on 13 March 2020. The private plan change request was accepted under clause 25(2)(b) on the basis that the request did not meet the criteria for rejection under clause 25(4) of Schedule 1 to the RMA, having regard to relevant case law, and it was more appropriate to accept the request than to adopt it or treat it as a resource consent application. A record of this decision is attached as **Attachment 6** to this report.
145. PC42 was notified on 26 March 2020. Unintentionally, the public notification coincided with the first day of the nation-wide Alert Level 4 lockdown. The notification start date and arrangements were all set well before the government's COVID-19 response escalated.
146. This timing was unfortunate as the lockdown restrictions meant that council libraries and service centres (where hard copies of the documents were kept) were not open to the public. The ability for the community to hold meetings about the landfill proposal was also prevented by the lockdown restrictions.
147. To counter this, the council and WMNZ agreed to produce hard copies of documents and mail them to anyone requiring them. The council also produced some frequently asked questions on PC42 and the related but separate resource consent applications. It is important to remember that all the PC42 documents were available on the council website throughout this lockdown period and the vast majority of the public accessed the information this way.
148. Nevertheless, there were still calls for the council to put PC42 on hold during the Alert Level 4 lockdown period. However, once the notification was underway, Auckland Council could not stop the process without the applicant's agreement. Only central government can make changes to the RMA process and timeframes. On 31 March the

council formally wrote to WMNZ requesting they place both the application for resource consents and the private plan change request on-hold until Alert Levels 4 and 3 had lifted. WMNZ declined this request but did state that they would not oppose any late submissions (up to a certain point).

149. The official public notification period therefore remained at 40 working days (a longer than normal submission period due to the volume of information accompanying the proposals and double the minimum time specified in the RMA). The last day for submissions was officially 26 May 2020. On 25 June the summary of decisions requested in submissions was notified for further submissions.
150. When the hearings panel of independent commissioners was appointed the chairperson gave directions for the council to accept submissions on PC42 up until 31 July 2020 (as offered by WMNZ). Any submissions received after this time were up to the discretion of the panel. A number of submissions were received after the 26 May closing date and before 31 July. These submissions were accepted under Section 37 of the RMA. A second summary of decisions requested incorporating all the submissions until the end of July was notified on 20 August.
151. Due to the high number of submissions and the overlapping private plan change and resource consent processes a system was developed to classify whether submissions were being lodged on PC42 or the application for resource consents as shown in Figure 7 below.

Submission method / details	Submission is on PC42 or RC
Using PC42 form (online or pdf)	PC42
Using resource consent form but submission mentions PC42	PC42 and RC
No form and submission only mentions PC42	PC42
No form and submission only mentions resource consent	RC
No form and submission specifically mentions neither process	PC42 and RC

Figure 7 - Submissions classification system

152. In late August, the council became aware that a number of submissions on the application for resource consents (a separate legal process) should have also been classified as being on the private plan change (using the above table as a guide). In total, 19 submissions were found and these were then notified on 4 September for further submissions. The further submissions period closed on 18 September.
153. In August, there was one late submission and two late requests for further information to be added to already lodged submissions. The hearings panel considered that the requests for further information to be added to submissions were unnecessary as the material could be tabled or presented at the hearing.
154. The late submission covered issues already raised in other on time submissions and therefore the panel found that an appropriate assessment of the effects of PPC42 could be made without extending the time limit to accept the late submission. On this basis the late submission was not accepted. The full directions from the panel on these late submissions is included in **Attachment 8**.
155. Aside from those mentioned above, no additional late submissions have been received on PC42 at the time of writing this report.
156. A total of 11 further submissions have been received at the time of writing this report.

9. HEARINGS AND DECISION-MAKING CONSIDERATIONS

157. Clause 8B of Schedule 1 of RMA requires that a local authority shall hold hearings into submissions on its proposed plan. Under section 34 of the RMA, the Auckland Council Regulatory Committee⁶⁰ has delegated to the hearings commissioners authority to determine council's decisions on PC42. The commissioners will not be recommending a decision to the council but will be issuing the decision directly.
158. This report summarises and discusses submissions received on PC42. It makes recommendations on whether to accept, in full or in part; or reject, in full or in part; each submission. This report also identifies what amendments, if any, can be made to address matters raised in submissions. Any conclusions or recommendations in this report are not binding on the hearing commissioners.
159. The hearing commissioners will consider all the information in submissions together with evidence presented at the hearing. The hearing will be a joint hearing with the related resource consent applications seeking to establish a landfill on the PC42 site.
160. This report has been prepared by Ryan Bradley. I am a Principal Planner in the Auckland Council's North, West, and Islands Planning Unit. In writing this report, I have drawn on technical advice provided by the following technical experts:

Role in PC42	Name and title
Technical expert – Aquatic Ecologist	Mark Lowe – Freshwater Ecologist, Morphem Environmental Limited
Technical expert – Terrestrial Ecologist	Simon Chapman – Principal Ecologist, Ecology New Zealand Limited
Technical expert – Traffic Engineer	Gary Black – Principal Transportation Engineer, Harrison Grierson
Technical expert – Noise Consultant	Jon Styles – Director and Principal Acoustic and Vibration Consultant, Styles Group
Technical expert – Human Health Risk	Sharon Tang, Senior Specialist, Auckland Council
Technical expert – Landscape Architect	Peter Kensington – Consultant Landscape Architect, KPLC Limited
Technical expert – Erosion & Sediment Control	Fiona Harte, Senior Specialist, Auckland Council
Technical expert – Odour & air quality	Paul Crimmins – Senior Specialist, Contamination, Air & Noise Team, Auckland Council
Technical expert – Waste acceptance criteria & environmental risk	Natalie Webster – Technical Director of Contaminated Land, Pattle Delamore Partners Limited
Technical expert – Landfill engineering	Alan Pattle – Technical Director of Water and Geotechnics, Pattle Delamore Partners Limited
Technical expert – Hydrogeology	Aslan Perwick – Groundwater Services Leader, Pattle Delamore Partners Limited
Technical expert – Geotechnical & seismicity	Ross Roberts – Geotechnical and Geological Practice Lead, Auckland Council
Technical expert – Industrial and trade stormwater	Dr Arsini Hanna – Senior Specialist: Stormwater, Wastewater and Industrial or Trade Activities, Auckland Council

⁶⁰ Resolution number REG/2020/28

Role in PC42	Name and title
Technical experts – Healthy Waters	Iresh Jayawardena – Healthy Waters Specialist: Resource Management, Auckland Council Ken Tomkins – Senior Healthy Waters Specialist: Catchment Planning, Auckland Council Sarah Nolan – Healthy Waters Specialist: Waterways Planning, Auckland Council Melody Mendez – Healthy Waters Specialist: Strategy & Resilience, Auckland Council
Technical experts– Economics	Shyamal Maharaj, Economist, Auckland Council Shane Martin, Senior Economist, Auckland Council
Technical expert – Archaeology	Robert Brassey - Principal Specialist Cultural Heritage, Auckland Council

10. STATUTORY AND POLICY FRAMEWORK

161. Private plan change requests can be made to the Council under clause 21 of Schedule 1 of the RMA. The provisions of a private plan change request must comply with the same mandatory requirements as Council initiated plan changes, and the private plan change request must contain an evaluation report in accordance with section 32 and clause 22(1) in Schedule 1 of the RMA.
162. Clause 29(1) of Schedule 1 of the RMA provides “except as provided in subclauses (1A) to (9), Part 1, with all necessary modifications, shall apply to any plan or change requested under this Part and accepted under clause 25(2)(b)”.
163. The RMA requires territorial authorities to consider a number of statutory and policy matters when developing proposed plan changes. There are slightly different statutory considerations if the plan change affects a regional plan or district plan matter. In this case, the proposed precinct provisions sought as part of PC42 affect both district and regional plan provisions. The following sections summarise the statutory and policy framework relevant to PC42.

10.1. Resource Management Act 1991

10.1.1. Plan change matters – regional and district plans

164. In the development of a proposed plan change to a regional and/ or district plan, the RMA sets out mandatory requirements in the preparation and process of the proposed plan change. Figure 8 below summarises matters for plan changes which address both regional and district plan matters.

Relevant Act/ Policy/ Plan	Section	Matters
Resource Management Act 1991	Part 2	Purpose and intent of the Act
Resource Management Act 1991	Section 32	Requirements preparing and publishing evaluation reports. This section requires councils to consider the alternatives, costs and benefits of the proposal.
Resource Management Act 1991	Section 80	Enables a ‘combined’ regional and district document. The Auckland Unitary Plan is in part a regional plan and district plan to assist Council to carry out its functions as a regional council and as a territorial authority
Resource Management Act 1991	Schedule 1	Sets out the process for preparation and change of policy statements and plans by local authorities

Figure 8 - Plan change matters relevant to regional and district plans

10.1.2. Resource Management Act 1991 – Regional matters

165. There are mandatory considerations in the development of a proposed plan change to regional matters in addition to those identified in Figure 8. Figure 9 below summarises regional matters under the RMA, relevant to PC42.

Relevant Act / Policy / Plan	Section	Matters
Resource Management Act 1991	Part 2	Purpose and intent of the Act
Resource Management Act 1991	Section 30	Functions of regional councils in giving effect to the RMA
Resource Management Act 1991	Section 63	Sets out the purpose of regional plans
Resource Management Act 1991	Section 65	Sets out matters to be considered for changes to regional plans
Resource Management Act 1991	Section 66	Sets out matters to be considered in (other) regional council plans
Resource Management Act 1991	Section 67	Sets out required contents of regional plans
Resource Management Act 1991	Section 68	Sets out the purpose and considerations of rules in regional plans (regional rules)
Resource Management Act 1991	Section 69	Sets out matters to be considered for rules relating to water quality
Resource Management Act 1991	Section 70	Sets out matters to be considered for rules relating to discharges

Figure 9 - Plan change - regional matters under the RMA

10.1.3. Resource Management Act 1991 – District matters

166. There are mandatory considerations in the development of a proposed plan change to district plans and rules in addition to those identified above. Figure 10 below summarises district plan matters under the RMA, relevant to PC42.

Relevant Act / Policy / Plan	Section	Matters
Resource Management Act 1991	Part 2	Purpose and intent of the Act.
Resource Management Act 1991	Section 31	Functions of territorial authorities in giving effect to the Resource Management Act 1991.
Resource Management Act 1991	Section 73	Sets out the requirements for the preparation and change of district plans, including that this occur in accordance with the relevant part of Schedule 1 of the RMA.
Resource Management Act 1991	Section 74	Matters to be considered by a territorial authority when preparing or changing its district plan. This includes its functions under section 31, Part 2 of the RMA, national policy statement, other regulations and other matter.
Resource Management Act 1991	Section 75	Outlines the requirements in the contents of a district plan
Resource Management Act 1991	Section 76	Outlines the purpose of district rules, which is to carry out the functions of the RMA and achieve the objectives and policies set out in the district plan. A district rule also requires the territorial authority to have regard to the actual or potential effect (including adverse

effects), of activities in the proposal, on the environment.

Figure 10 - Plan change – District plan matters under the RMA

167. The mandatory requirements for plan preparation are comprehensively summarised by the Environment Court in *Long Bay-Okura Great Park Society Incorporated and Others v North Shore City Council* (Decision A078/2008)⁶¹, where the Court set out the following measures for evaluating objectives, policies, rules and other methods. These requirements are outlined in Figure 11 below.

A. General requirements

1. *A district plan (change) should be designed to accord with and assist the territorial authority to carry out its functions so as to achieve, the purpose of the Act.*
2. *When preparing its district plan (change) the territorial authority must give effect to any national policy statement or New Zealand Coastal Policy Statement.*
3. *When preparing its district plan (change) the territorial authority shall:*
 - (a) *have regard to any proposed regional policy statement;*
 - (b) *not be inconsistent with any operative regional policy statement.*
4. *In relation to regional plans:*
 - (a) *the district plan (change) must not be inconsistent with an operative regional plan for any matter specified in section 30(1) [for a water conservation order]; and*
 - (b) *must have regard to any proposed regional plan on any matter of regional significance etc;*
5. *When preparing its district plan (change) the territorial authority must also:*
 - *have regard to any relevant management plans and strategies under other Acts, and to any relevant entry in the Historic Places Register and to various fisheries regulations; and to consistency with plans and proposed plans of adjacent territorial authorities;*
 - *take into account any relevant planning document recognised by an iwi authority; and*
 - *not have regard to trade competition;*
6. *The district plan (change) must be prepared in accordance with any regulation;*
7. *The formal requirement that a district plan (change) must also state its objectives, policies and the rules (if any) and may state other matters.*

B. Objectives [the section 32 test for objectives]

8. *Each proposed objective in a district plan (change) is to be evaluated by the extent to which it is the most appropriate way to achieve the purpose of the Act.*

C. Policies and methods (including rules) [the section 32 test for policies and rules]

9. *The policies are to implement the objectives, and the rules (if any) are to implement the policies;*
10. *Each proposed policy or method (including each rule) is to be examined, having regard to its efficiency and effectiveness, as to whether it is the most appropriate method for achieving the objectives of the district plan taking into account:*

⁶¹ Subsequent cases have updated the Long Bay summary, including *Colonial Vineyard v Marlborough District Council* [2014] NZEnvC 55.

<p>(a) <i>the benefits and costs of the proposed policies and methods (including rules); and</i></p> <p>(b) <i>the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.</i></p>
<p>D. Rules</p>
<p>11. <i>In making a rule the territorial authority must have regard to the actual or potential effect of activities on the environment.</i></p>
<p>E. Other statutes:</p>
<p>12. <i>Finally territorial authorities may be required to comply with other statutes. Within the Auckland Region they are subject to:</i></p> <ul style="list-style-type: none"> • <i>the Hauraki Gulf Maritime Park Act 2000;</i> • <i>the Local Government (Auckland) Amendment Act 2004.</i>

Figure 11 - Mandatory requirements for plan preparation (summarised by the Environment Court)

10.2. National policy statements

168. There are a number of National Policy Statements considered relevant to PC42 which are discussed below. Pursuant to sections 75(3)(a) and 67(3)(a) of the RMA, a plan change must give effect to any relevant national policy statement.

10.2.1. National Policy Statement for Freshwater Management (2020)

169. The National Policy Statement for Freshwater Management 2020 ('NPS:FM') sets out the objectives and policies for freshwater management under the RMA. It came into effect on 3 September 2020 and replaced the 2014 version (amended 2017).

170. The underlying concept of the NPS:FM is Te Mana o te Wai. This is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

171. Of relevance to PC42 is that the NPS:FW includes an effects management hierarchy in relation to natural inland wetlands and rivers. It is defined as an approach to managing the adverse effects of an activity on the extent or values of a wetland or river (including cumulative effects and loss of potential value) that requires that:

- (a) adverse effects are avoided where practicable; and
- (b) where adverse effects cannot be avoided, they are minimised where practicable; and
- (c) where adverse effects cannot be minimised, they are remedied where practicable; and
- (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting is provided where possible; and
- (e) if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and
- (f) if aquatic compensation is not appropriate, the activity itself is avoided

172. Some of the provisions in PC42 propose a specific effects management hierarchy that is inconsistent with the hierarchy in the NPS:FW. The precinct provisions have different terminology with terms such as "to the extent reasonably practicable" and they

presuppose that there will be significant residual effects. In this respect, PC42 as proposed would not give effect to the NPS:FW.

173. However, in my view, based on the modifications I am recommending in response to submissions (e.g. the deletion of objectives and policies that are inconsistent with the effects hierarchy in the NPS:FW), the precinct provisions can give effects to the NPS:FW.

10.2.2. National Policy Statement for Renewable Electricity Generation (2011)

174. The National Policy Statement for Renewable Electricity Generation ('**NPS:REG**') recognises the benefits of renewable energy generation and directs councils to provide for their development, operation, maintenance and upgrading.
175. Policy E1 of the NPS:REG directs plans to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity generation activities using biomass energy resources.
176. Section 5.2.1.1 of the applicant's s32 Report outlines that the energy to be provided by the combustion of biogas (landfill gas) is considered to be a form of renewable energy generation and is therefore provided for by the NPS:REG (as confirmed by the NPS:REG Technical Guide⁶²) which specifically refers to organic waste within landfills as a source of renewable biomass energy.
177. In my view, the proposed Auckland Regional Landfill precinct gives effect to the NPS:REG through the proposed Objective I617.2(1) and Policy I617.3(1) which refer to enabling and recognising biomass being used for renewable energy generation. Furthermore, the activity status for energy generation from waste biomass and related discharges are classified as discretionary activities in the precinct.
178. I note that Policy C1 of the NPS:REG refers to "the need to locate the renewable electricity generation activity where the renewable energy resource is available". This supports the use of a precinct over specific area land to provide for energy generation from waste biomass (i.e. the energy generation needs to be enabled close to the landfill where the landfill gas is generated).
179. I agree with the analysis of the council's air discharge technical specialist (Mr Crimmins – see **Attachment 10**) that the precinct's provision for the generation of electricity from the combustion of landfill gas may enable some reduction in the discharge of greenhouse gases from electricity generation using fossil fuels⁶³ and therefore gives effect to the NPS:REG.

10.2.3. Draft National Policy Statement for Indigenous Biodiversity (2019)

180. The Draft National Policy Statement for Indigenous Biodiversity ('**NPS:IB**') was released for consultation in November 2019. It is a central government response to an identified gap in policy around how biodiversity is managed. The NPS-IB will require councils to be more proactive in protecting biodiversity. The Government recently

⁶² Ministry for the Environment. 2011. *National Policy Statement for Renewable Electricity Generation 2011: Implementation Guide*. Wellington: Ministry for the Environment.

⁶³ Note: While section 10.7.4 of this report explains how the effects on climate change from PC42 cannot be considered, there is an exception in Section 70A of the RMA. This enables the consideration of the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases.

announced that the NPS-IB will not be delivered until April 2021 (delayed from mid-2020 due to COVID-19).

181. The objectives in the Draft NPS:IB relate to the maintenance, integrated management, restoration and enhancement of indigenous biodiversity and allows for the recognition of the importance of involving community and the principles of the Treaty of Waitangi.
182. Of relevance to PC42 is Policy 2: “to ensure that local authorities adopt a precautionary approach towards proposed activities with effects on indigenous biodiversity that are uncertain, unknown, or little understood but potentially significant.” PC42 proposes activities which will influence indigenous biodiversity, and the Draft NPS:IB is considered relevant.
183. However, the Draft NPS:IB has no legal effect as it does not yet come within the RMA definition of a national policy statement (“a statement issued under section 52(2)”). The Draft NPS:IB has not yet been issued by the Governor-General under section 52(2).

10.2.4. Other National Policy Statements

184. I do not consider that the National Policy Statement on Urban Development 2020, the National Policy Statement on Electricity Transmission 2011, and the New Zealand Coastal Policy Statement (2010)⁶⁴ are relevant to PC42.

10.3. National environmental standards or regulations

185. Under section 44A of the RMA, local authorities must observe national environmental standards in its district/ region. No rule or provision may be duplicate or in conflict with a national environmental standard or regulation. Pursuant to sections 74(1)(f) and 66(1)(f) of the RMA, a plan change must give effect to any relevant national environmental standard⁶⁵.

10.3.1. National Environmental Standards for Freshwater (2020)

186. The National Environmental Standards for Freshwater (**NES:FW**) regulates activities that pose risks to the health of freshwater and freshwater ecosystems. The standards relevant to PC42 are designed to:
 - protect existing inland wetlands
 - protect rural streams from in-filling
 - ensure connectivity of fish habitat (fish passage)
187. The provisions in PC42 are in accordance with the NES:FW except for in relation to activities (A8) and (A9) in activity table I617.4.1 and activity (A1) in Activity table I617.4.2 which all involve modification of wetlands. The NES:FW makes earthworks and diversion and drainage within a natural wetland a prohibited activity (section 53), unless it is related to ‘specified infrastructure’. The potential landfill under the proposed precinct does not meet the definition of ‘specified infrastructure’ in the NES-FW as it is not a ‘lifeline utility’, nor is it identified as regionally significant in the Regional Policy Statement or Regional Plan, and it is not related to flood control.
188. Under sections 66(1)(f) and 74(1)(f) of the RMA, any plan change must be in accordance with any regulations. Therefore, activities (A8) and (A9) in activity table I617.4.1 and (A1) in activity table I617.4.2 cannot remain in the precinct with their proposed non-complying status.

⁶⁴ Both the applicant’s and the council’s landscape specialists agree that the subject site is not within the ‘coastal environment’ as defined by the New Zealand Coastal Policy Statement (2010).

⁶⁵ Section 43 of the RMA states that national environmental standards are regulations.

10.3.2. National Environmental Standards for Air Quality (2004)

189. The National Environmental Standards for Air Quality ('**NES:AQ**') are regulations to set a guaranteed minimum level of health protection for all New Zealanders. They set prohibited air discharge activities, ambient air quality standards, and design standards relevant to the design and operation of landfills.
190. The proposed Auckland Regional Landfill precinct is not written in a way that breaches any of the standards in the NES:AQ. Any future air discharge activity applied for within the proposed precinct would be subject to an assessment against the NES:AQ provisions. Therefore, PC42 is not in conflict with the NES:AQ.

10.3.3. National Environmental Standards for Sources of Drinking Water (2008)

191. The National Environmental Standard for Sources of Human Drinking Water ('**NES:DW**') sets requirements for protecting sources of human drinking water from becoming contaminated. The standard applies to source water before it is treated and only sources used to supply human drinking water (i.e. not stock or other animals).
192. The NES:DW can be considered relevant to PC42 as Watercare's municipal water supply for Wellsford is sourced from the Hōteu River, some 4km upstream from Sub-precinct A (where a landfill is proposed). There are also other domestic bores in the vicinity that may be used for agriculture.
193. Contaminants such as microorganisms can pose a risk to human health when they enter drinking water supplies and that water is then consumed. Taking steps to prevent such contaminants from entering drinking water sources is part of a multiple barrier approach to reduce this risk to people.
194. The NES:DW requires councils to ensure that effects of activities on drinking water sources are considered in decisions on resource consents and regional plans. Specifically, with regards to PC42 the Auckland Council must be satisfied that any permitted activities in the proposed Auckland Regional Landfill precinct (regional plan rules) will not result in community drinking water supplies being unsafe for human consumption following existing treatment.
195. As the proposed Auckland Regional Landfill precinct does not include any permitted activities, it is not in conflict with the NES:DW. Any effects on sources of drinking water can be assessed under a discretionary activity for a landfill as proposed in the precinct.
196. It is noted that Watercare have lodged a submission (#120) on PC42 relating to the protection of the municipal water supply for Wellsford, and this is assessed in section 14.4 of this report.

10.3.4. National Environmental Standards for Plantation Forestry (2018)

197. The objectives of the National Environmental Standards for Plantation Forestry ('**NES:PF**') are to maintain or improve the environmental outcomes associated with plantation forestry activities nationally and increase certainty and efficiency in the management of plantation forestry activities.
198. The NES:PF covers plantation forestry activities, with the relevant activity to PC42 being earthworks. However, I agree with the analysis of the council's erosion and sediment control technical specialists (Ms Harte – see **Attachment 5**) that the provisions in the proposed Auckland Regional Landfill precinct only cover discharges (from earthworks) from new or existing landfills and not forestry. Therefore, the current

provisions of the NES:PF (and E11 of the Unitary Plan) would continue to apply and PC42 is not in conflict with the NES:PF.

10.3.5. Other National Environmental Standards

199. I do not consider that the National Environmental Standards for Marine Aquaculture 2020, the National Environmental Standards for Electricity Transmission Activities 2010, the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health, or the National Environmental Standards for Telecommunication Facilities 2016 are relevant to PC42.

10.4. Auckland Unitary Plan

200. Any plan change to the Unitary Plan must give effect to the Regional Policy Statement (sections 67(3)(c) 75(3)(c) of the RMA). The existing regional and district plan should also be considered. The Unitary Plan is a regional policy statement, a regional plan, and a district plan. Therefore, Figure 12 and Figure 13 below summarise the relevant sections of the Unitary Plan for consideration for PC42.

Regional Policy Statement	Relevant Regional Policy Statement objectives and policies
<p>B3 – Infrastructure, transport and electricity</p>	<p>B3.2 Infrastructure</p> <p><i>Objectives</i></p> <p>B3.2.1(3) Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on:</p> <ul style="list-style-type: none"> (a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character; (b) the health and safety of communities and amenity values. <p>B3.2.1 (4) The functional and operational needs of infrastructure are recognised.</p> <p>B3.2.1 (8) The adverse effects of infrastructure are avoided, remedied or mitigated.</p> <p><i>Policies</i></p> <p>B3.2.2 (1) Enable the efficient development, operation, maintenance and upgrading of infrastructure.</p> <p>B3.2.2(3) Provide for the locational requirements of infrastructure by recognising that it can have a functional or operational need to be located in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character</p> <p>B 3.2.2 (6) Enable the development, operation, maintenance and upgrading of infrastructure in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character while ensuring that the adverse effects on the values of such areas are avoided where practicable or otherwise remedied or mitigated.</p> <p>B3.2.2 (8) Avoid, remedy or mitigate the adverse effects from the construction, operation, maintenance or repair of infrastructure.</p>

Regional Policy Statement	Relevant Regional Policy Statement objectives and policies
	<p>B3.4 Energy <i>Objectives</i> B3.4.1 (1) Existing and new renewable electricity generation is provided for.</p> <p><i>Policies</i> B3.4.2 (1) Recognise the national, regional and local benefits to be derived from maintaining or increasing the level of electricity generated from renewable energy sources.</p> <p>B3.4.2 (2) Provide for renewable electricity generation activities to occur at different scales and from different sources to reduce reliance on non-renewable energy sources.</p>
<p>B6 – Mana whenua</p>	<p>B6.2 Recognition of Treaty of Waitangi/Te Tiriti o Waitangi partnerships and participation <i>Objectives</i> B6.2.1 (1) The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised and provided for in the sustainable management of natural and physical resources including ancestral lands, water, air, coastal sites, wāhi tapu and other taonga.</p> <p>B6.2.1 (2) The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised through Mana Whenua participation in resource management processes.</p> <p><i>Policies</i> B6.2.2(1) Provide opportunities for Mana Whenua to actively participate in the sustainable management of natural and physical resources including ancestral lands, water, sites, wāhi tapu and other taonga in a way that does all of the following:</p> <ul style="list-style-type: none"> (a) recognises the role of Mana Whenua as kaitiaki and provides for the practical expression of kaitiakitanga; (b) builds and maintains partnerships and relationships with iwi authorities; (c) provides for timely, effective and meaningful engagement with Mana Whenua at appropriate stages in the resource management process, including development of resource management policies and plans; (d) recognises the role of kaumātua and pūkenga; (e) recognises Mana Whenua as specialists in the tikanga of their hapū or iwi and as being best placed to convey their relationship with their ancestral lands, water, sites, wāhi tapu and other taonga; (f) acknowledges historical circumstances and impacts on resource needs; (g) recognises and provides for mātauranga and tikanga; and (h) recognises the role and rights of whānau and hapū to speak and act on matters that affect them. <p>B6.3 Recognising Mana Whenua values <i>Objectives</i> B6.3.1 (1) Mana Whenua values, mātauranga and tikanga are properly reflected and accorded sufficient weight in resource management decision-making.</p> <p>B6.3.1(2) The mauri of, and the relationship of Mana Whenua with, natural and physical resources including freshwater, geothermal resources, land, air and coastal resources are enhanced overall.</p>

**Regional
Policy
Statement**

Relevant Regional Policy Statement objectives and policies

B6.3.1(3) The relationship of Mana Whenua and their customs and traditions with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, natural resources or historic heritage values is recognised and provided for.

B6.3.1(6) Require resource management decisions to have particular regard to potential impacts on all of the following:

- (a) the holistic nature of the Mana Whenua world view;
- (b) the exercise of kaitiakitanga;
- (c) mauri, particularly in relation to freshwater and coastal resources;
- (d) customary activities, including mahinga kai;
- (e) sites and areas with significant spiritual or cultural heritage value to Mana Whenua; and
- (f) any protected customary right in accordance with the Marine and Coastal Area (Takutai Moana) Act 2011.

Policies

B6.3.2(3) Ensure that any assessment of environmental effects for an activity that may affect Mana Whenua values includes an appropriate assessment of adverse effects on those values.

B6.3.2 (4) Provide opportunities for Mana Whenua to be involved in the integrated management of natural and physical resources in ways that do all of the following:

- (a) recognise the holistic nature of the Mana Whenua world view;
- (b) recognise any protected customary right in accordance with the Marine and Coastal Area (Takutai Moana) Act 2011; and
- (c) restore or enhance the mauri of freshwater and coastal ecosystems

B6.3.2 (5) Integrate Mana Whenua values, mātauranga and tikanga when giving effect to the National Policy Statement on Freshwater Management 2014 in establishing all of the following:

- (a) Water quality limits for freshwater, including groundwater;
- (b) The allocation and use of freshwater resources, including groundwater; and
- (c) Integrated management of the effects of the use and development of land and freshwater on coastal water and the coastal environment.

B6.5 Protection of Mana Whenua Cultural Heritage

Objectives

B6.5.1 (1) The tangible and intangible values of Mana Whenua cultural heritage are identified, protected and enhanced.

B6.5.1(2) The relationship of Mana Whenua with their cultural heritage is provided for.

Policies

B6.5.2(1) Protect Mana Whenua cultural and historic heritage sites and areas which are of significance to Mana Whenua.

B6.5.2 (2) Identify and evaluate Mana Whenua cultural and historic heritage sites, places and areas.

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	<p>B6.5.2(6) Protect Mana Whenua cultural heritage that is uncovered during subdivision, use and development by all of the following:</p> <ul style="list-style-type: none"> (a) requiring a protocol to be followed in the event of accidental discovery of kōiwi, archaeology or artefacts of Māori origin; (b) undertaking appropriate actions in accordance with mātauranga and tikanga Māori; and (c) requiring appropriate measures to avoid, remedy or mitigate further adverse effects.
<p>B7 – Natural resources</p>	<p>B7.2 Indigenous biodiversity</p> <p><i>Objectives</i></p> <p>B7.2.1 (1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision use and development.</p> <p>B7.2.1 (2) Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p> <p><i>Policies</i></p> <p>B7.2.2 (1) Identify and evaluate areas of indigenous vegetation and the habitats of indigenous fauna in terrestrial and freshwater environments considering the following factors in terms of the descriptors contained in Schedule 3 Significant Ecological Areas – Terrestrial Schedule:</p> <ul style="list-style-type: none"> (a) Representativeness; (b) Stepping stones, migration pathways and buffers; (c) Threat status and rarity; (d) Uniqueness or distinctiveness; and (e) Diversity. <p>B7.2.2 (2) Include an area of indigenous vegetation or a habitat of indigenous fauna in terrestrial or freshwater environments in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule if the area or habitat is significant.</p> <p>B7.2.2 (5) Avoid adverse effects on areas listed in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.</p> <hr/> <p>B7.3 Freshwater systems</p> <p><i>Objectives</i></p> <p>B7.3.1 (1) Degraded freshwater systems are enhanced.</p> <p>B7.3.1 (2) Loss of freshwater systems is minimised.</p> <p>B7.3.1 (3) The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.</p> <p><i>Policies</i></p> <p>B7.3.2 (3) Promote the enhancement of freshwater systems identified as being degraded to progressively reduce adverse effects.</p>

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B7.3.2 (4) Avoid the permanent loss and significant modification or diversion of lakes, rivers, streams (excluding ephemeral streams), and wetlands and their margins, unless all of the following apply:

- (a) it is necessary to provide for:
 - (i) the health and safety of communities; or
 - (ii) the enhancement and restoration of freshwater systems and values; or the sustainable use of land and resources to provide for growth and development; or
 - (iii) infrastructure;
- (b) no practicable alternative exists;
- (c) mitigation measures are implemented to address the adverse effects arising from the loss in freshwater system functions and values; and
- (d) where adverse effects cannot be adequately mitigated, environmental benefits including on-site or off-site works are provided.

B7.3.2 (6) Restore and enhance freshwater systems where practicable when development, change of land use, and subdivision occur.

B7.4 Coastal water, freshwater and geothermal water

Objectives

B7.4.1 (2) The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded.

B7.4.1.(4) The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced.

B7.4.1.(5) The adverse effects from changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated.

B7.4.1 (6) Mana Whenua values, mātauranga and tikanga associated with coastal water, freshwater and geothermal water are recognised and provided for, including their traditional and cultural uses and values.

Policies

B7.4.2.(1) Integrate the management of subdivision, use, development and coastal water and freshwater, by:

- (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of growth; and
- (b) requiring catchment management planning as part of structure planning;
- (c) controlling the use of land and discharges to minimise the adverse effects of runoff on water and progressively reduce existing adverse effects where those water are degraded; and
- (d) avoiding development where it will significantly increase adverse effects on water, unless these adverse effects can be adequately mitigated.

B7.4.2.(7) Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise, all of the following:

- (a) significant bacterial contamination of freshwater and coastal water;
- (b) adverse effects on the quality of freshwater and coastal water;

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	<p>(c) adverse effects from contaminants, including nutrients generated on or applied to land, and the potential for these to enter freshwater and coastal water from both point and non-point sources;</p> <p>(d) adverse effects on Mana Whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and</p> <p>(e) adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply.</p> <p>B7.4.2 (8) Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water, by:</p> <p>(a) promoting the use of soil conservation and management measures to retain soil and sediment on land; and</p> <p>(b) requiring land disturbing activities to use industry best practice and standards appropriate to the nature and scale of the land disturbing activity and the sensitivity of the receiving environment.</p> <p>B7.5 Air <i>Objectives</i></p> <p>B7.5.1(1) The discharge of contaminants to air from use and development is managed to improve region-wide air quality, enhance amenity values in urban areas and to maintain air quality at appropriate levels in rural and coastal areas.</p> <p>B7.5.1(2) Industry and infrastructure are enabled by providing for reduced ambient air quality amenity in appropriate locations.</p> <p>B7.5.1(3) Avoid, remedy or mitigate adverse effects from discharges of contaminants to air for the purpose of protecting human health, property and the environment.</p> <p><i>Policies</i></p> <p>B7.5.2(1) Manage discharge of contaminants to air from use and development to:</p> <p>(a) avoid significant adverse effects on human health and reduce exposure to adverse air discharges;</p> <p>(b) control activities that use or discharge noxious or dangerous substances;</p> <p>(c) minimise reverse sensitivity effects by avoiding or mitigating potential land use conflict between activities that discharge to air and activities that are sensitive to air discharges;</p> <p>(d) protect activities that are sensitive to the adverse effects of air discharges;</p> <p>(e) protect flora and fauna from the adverse effects of air discharges;</p> <p>(f) enable the operation and development of infrastructure, industrial activities and rural production activities that discharge contaminants into air, by providing for low air quality amenity in appropriate locations;</p>

Figure 12 - Relevant Regional Policy Statement objectives and policies

201. Overall, I generally agree with the applicant's assessment of the proposed precinct against the Regional Policy Statement in section 5.1.1 and Appendix E of the private plan change request. However, my assessment does differ in that I consider that some of the provisions of the precinct do not give effect to the Regional Policy Statement – particularly those provisions in the precinct that are not consistent with the effects hierarchy in the Regional Policy Statement.
202. In light of this, later in this report I have recommended changes to the precinct to bring it back into line with the Regional Policy Statement. There are also some mana whenua

provisions in the Regional Policy Statement that are better given effect to by the modified wording in the precinct. The recommended modifications to the precinct are shown in **Attachment 1** and **Attachment 2** of this report.

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<p>D4 – Natural Stream Management Areas Overlay</p>	<p><i>Objectives</i> D4.2 (1) Rivers and streams identified as natural stream management areas with high natural character and high ecological values are protected.</p> <p><i>Policies</i> D4.3 (1) Protect the in-stream values and riparian margins of natural stream management areas.</p> <p>D4.3 (2) Allow water takes and contaminant discharges only where they are of a scale and type that protects the in-stream values of these rivers and streams.</p> <p>D4.3 (3) Maintain and where possible enhance fish passage between the coastal marine area and the upstream extent of natural stream management areas.</p> <p>D4.3 (4) Avoid structures and activities in natural stream management areas that disturb, damage, remove or replace the natural bed and course of the river or stream and its associated indigenous riparian vegetation.</p> <p>D4.3 (5) Provide for infrastructure in natural stream management areas where there is a functional or operational need to be in that location or traverse the area and there is no practicable alternative.</p>
<p>D8 – Wetland Management Areas Overlay</p>	<p><i>Objectives</i> D8.2 (1) High natural character and ecological values of wetland management areas are maintained or enhanced.</p> <p><i>Policies</i> D8.3. (1) Maintain or enhance wetland management areas by:</p> <ul style="list-style-type: none"> (a) maintaining water quality where it is excellent or good and progressively improve where it is degraded; (b) maintaining water levels to ensure ecosystem functionality and significant variations in water levels occur only through natural fluctuations; (c) avoiding the removal or degradation of wetland vegetation in, on, or adjacent to wetlands; (d) avoiding adverse effects of any activity on ecological values; (e) maintaining the size and spatial extent of the wetland area by avoiding progressive loss of wetland areas; and (f) providing for wetland enhancement activities, including riparian planting and the removal of invasive pests. <p>D8.3. (3) Avoid activities in, on or adjacent to wetland management areas except where the activity:</p> <ul style="list-style-type: none"> (a) is for wetland conservation purposes, including pest removal; (b) is for public access and interpretative activities relating to high natural character and ecological values; or (c) is for operation, maintenance, upgrading or replacement of existing or new infrastructure; provided significant adverse effects

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	<p>on the high natural character and ecological values of the wetland are avoided, and other adverse effects are avoided, remedied, mitigated or offset.</p>
<p>D9 – Significant Ecological Areas Overlay</p>	<p><i>Objectives</i> D9.2. (1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.</p> <p>D9.2 (2) Indigenous biodiversity values of significant ecological areas are enhanced.</p> <p>D9.2 (3) The relationship between Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.</p> <p><i>Policies</i> D9.3 (1) Manage the effects of activities on the indigenous biodiversity values of areas identified as significant ecological areas by:</p> <ul style="list-style-type: none"> (a) avoiding adverse effects on indigenous biodiversity in the coastal environment to the extent stated in Policies D9.3(9) and (10); (b) avoiding other adverse effects as far as practicable, and where avoidance is not practicable, minimising adverse effects on the identified values; (c) remedying adverse effects on the identified values where they cannot be avoided; (d) mitigating adverse effects on the identified values where they cannot be avoided or remediated; and (e) considering the appropriateness of offsetting any residual adverse effects that are significant and where they have not been able to be mitigated, through protection, restoration and enhancement measures, having regard to Appendix 8 Biodiversity offsetting. <p>D9.2 (3) Enhance indigenous biodiversity values in significant ecological areas through any of the following:</p> <ul style="list-style-type: none"> (a) Restoration, protection and enhancement of threatened ecosystems and habitats for rare or threatened indigenous species; (b) Control, and where possible, eradication of plants and animal pests; Fencing of significant ecological areas to protect them from stock impacts; (c) Legal protection of significant ecological areas through covenants or similar mechanism; (d) Development and implementation of management plans to address adverse effects; (e) Re-vegetating areas using, where possible, indigenous species sourced from naturally growing plants in the vicinity with the same climactic and environmental conditions; or (f) Providing for the role of Mana Whenua as kaitiaki and for the practical exercise of kaitiakitanga in restoring, protecting and enhancing areas
<p>E1 – Water quality and integrated management</p>	<p><i>Objectives</i> E1.2.(1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.</p> <p>E1.2 (2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.</p> <p><i>Policies</i></p>

- E1.3(1)** Manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to:
- (a) the National Policy Statement for Freshwater Management National Bottom Lines;
 - (b) the Macroinvertebrate Community Index as a guideline for freshwater ecosystem health associated with different land uses within catchments in accordance with Policy E1.3(2); or
 - (c) other indicators of water quality and ecosystem health.
- E1.3(2)** Manage discharges, subdivision, use, and development that affect freshwater systems to:
- (a) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below; or
 - (b) enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below.
- E1.3 (3)** Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement.
- E1.3.(4)** When considering any application for a discharge, the Council must have regard to the following matters:
- (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the lifesupporting capacity of freshwater including on any ecosystem associated with freshwater; and
 - (b) the extent to which it is feasible and dependable that any more than a minor adverse effect on freshwater, and on any ecosystem associated with freshwater, resulting from the discharge would be avoided.
- E1.3.(5)** When considering any application for a discharge the Council must have regard to the following matters:
- (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and
 - (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.
- E1.3.(8)** Avoid as far as practicable, or otherwise minimise or mitigate, adverse effects of stormwater runoff from greenfield development on freshwater systems, freshwater and coastal water by:
- (a) taking an integrated stormwater management approach (refer to Policy E1.3.10);
 - (b) minimising the generation and discharge of contaminants, particularly from high contaminant generating car parks and high use roads and into sensitive receiving environments;
 - (c) minimising or mitigating changes in hydrology, including loss of infiltration, to:

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	<ul style="list-style-type: none"> (i) minimise erosion and associated effects on stream health and values; (ii) maintain stream baseflows; and (iii) support groundwater recharge; <p>(d) where practicable, minimising or mitigating the effects on freshwater systems arising from changes in water temperature caused by stormwater discharges; and</p> <p>(e) providing for the management of gross stormwater pollutants, such as litter, in areas where the generation of these may be an issue.</p> <p>E1.3.(9) Minimise or mitigate new adverse effects of stormwater runoff, and where practicable progressively reduce existing adverse effects of stormwater runoff, on freshwater systems, freshwater and coastal waters during intensification and redevelopment of existing urban areas by all of the following:</p> <ul style="list-style-type: none"> (a) requiring measures to reduce contaminants, particularly from high contaminant-generating car parks and high-use roads; (b) requiring measures to reduce the discharge of gross stormwater pollutants; (c) requiring measures to be adopted to reduce the peak flow rate and the volume of stormwater flows: <ul style="list-style-type: none"> (i) within sites identified in the Stormwater Management Area – Flow 1 and Flow 2 Control (as shown on the planning maps); (ii) where development exceeds the maximum impervious area for the relevant zone; or (iii) from areas of impervious surface where discharges may give rise to flooding or adversely affect rivers and streams; (d) taking an integrated stormwater management approach for large-scale and comprehensive redevelopment and intensification (refer to Policy E1.3.10 below) and encourage the restoration of freshwater systems where practicable; and (e) ensuring intensification is supported by appropriate stormwater infrastructure, including natural assets that are utilised for stormwater conveyance and overland flow paths. <p>E1.3.(11) Avoid as far as practicable, or otherwise minimise or mitigate adverse effects of stormwater diversions and discharges, having particular regard to:</p> <ul style="list-style-type: none"> (a) the nature, quality, volume and peak flow of the stormwater runoff; (b) the sensitivity of freshwater systems and coastal waters, including the Hauraki Gulf Marine Park; (c) the potential for the diversion and discharge to create or exacerbate flood risks; (d) options to manage stormwater on-site or the use of communal stormwater management measures; (e) practical limitations in respect of the measures that can be applied; and (f) the current state of receiving environments. <p>E1.3 (13) Require stormwater quality or flow management to be achieved on-site unless there is a downstream communal device or facility designed to cater for the site's stormwater runoff.</p>
<p>E2 – Water quantity, allocation and use</p>	<p><i>Policies</i></p> <p>E2.3 (19) Avoid damming water in the Natural Lake Management Areas Overlay, Wetland Management Areas Overlay and Natural Stream Management Areas Overlay other than where:</p>

	<ul style="list-style-type: none"> (a) these areas are in a Water Supply Management Areas Overlay and the damming is necessary for municipal water supply; (b) the damming is necessary for the protection or maintenance of the natural values of the management area and there are no practicable alternative methods to achieve this protection; or (c) the damming is necessary for managing hazards or the provision of infrastructure and there are no practicable alternatives to damming the water.
<p>E3 – Lakes, rivers, streams and wetlands</p>	<p><i>Objectives</i></p> <p>E3.2 (1) Degraded freshwater systems are enhanced.</p> <p>E3.2 (2) Loss of freshwater systems is minimised.</p> <p>E3.2 (3) Significant residual adverse effects on lakes, rivers, streams or wetlands that cannot be avoided, remedied or mitigated are offset where this will promote the purpose of the Resource Management Act 1991.</p> <p>E3.2 (4) Structures in, on, under or over the bed of a lake, river, stream or wetland are provided for where there are functional or operational needs for the structure to be in that location, or traverse that area.</p> <p>E3.2 (5) Activities in, on, under or over the bed of a lake, river, stream and wetland are managed to minimise adverse effects on the lake, river, stream or wetland.</p> <p>E3.2 (6) Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.</p> <p><i>Policies</i></p> <p>E3.3(1) Avoid significant adverse effects, and avoid where practicable or otherwise remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands within the following overlays:</p> <ul style="list-style-type: none"> (a) D4 Natural Stream Management Areas Overlay; (b) D5 Natural Lake Management Areas Overlay; (c) D6 Urban Lake Management Areas Overlay; (d) D9 Significant Ecological Areas Overlay; and (e) D8 Wetland Management Areas Overlay. <p>E3.3 (2) Manage the effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands outside the overlays identified in Policy E3.3(1) by:</p> <ul style="list-style-type: none"> (a) avoiding where practicable or otherwise remedying or mitigating any adverse effects on lakes, rivers, streams or wetlands; and (b) where appropriate, restoring and enhancing the lake, river, stream or wetland. <p>E3.3 (3) Enable the enhancement, maintenance and restoration of lakes, rivers, streams or wetlands</p> <p>E3.3 (4) Restoration and enhancement actions, which may form part of an offsetting proposal, for a specific activity should:</p> <ul style="list-style-type: none"> (a) be located as close as possible to the subject site; (b) be 'like-for-like' in terms of the type of freshwater system affected; (c) preferably achieve no net loss or a net gain in the natural values including ecological function of lakes, rivers, streams or wetlands; and

- (d) consider the use of biodiversity offsetting as outlined in Appendix 8 Biodiversity offsetting.

E3.3 (5) Avoid significant adverse effects, and avoid, remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands on:

- (a) the mauri of the freshwater environment; and
- (b) Mana Whenua values in relation to the freshwater environment.

E3.3 (6) Manage the adverse effects on Mana Whenua cultural heritage that is identified prior to, or discovered during, subdivision, use and development by:

- (a) complying with the protocol for the accidental discovery of kōiwi, archaeology and artefacts of Māori origin;
- (b) undertaking appropriate actions in accordance with mātauranga and tikanga Māori; and
- (c) undertaking appropriate measures to avoid adverse effects, or where adverse effects cannot be avoided, effects are remedied or mitigated.

E3.3 (7) Provide for the operation, use, maintenance, repair, erection, reconstruction, placement, alteration or extension, of any structure or part of any structure in, on, under, or over the bed of a lake, river, stream or wetland, and any associated diversion of water, where the structure complies with all of the following:

- (a) there is no practicable alternative method or location for undertaking the activity outside the bed of the lake, river, stream or wetland;
- (b) the structure is designed to be the minimum size necessary for its purpose to minimise modification to the bed of a lake, river, stream or wetland;
- (c) the structure is designed to avoid creating or increasing a hazard;
- (d) the structure is for any of the following:
 - (i) required as part of an activity designed to restore or enhance the natural values of any lakes, rivers, streams or wetlands and their margins, or any adjacent area of indigenous vegetation or habitat of indigenous fauna;
 - (ii) designed to maintain and/or enhance public access to, over and along any lake, river, stream or wetland and their margins;
 - (iii) necessary to provide access across a lake, river, stream or wetland;
 - (iv) associated with infrastructure;
 - (v) necessary for flood protection and the safeguarding of public health and safety; or
 - (vi) required for the reasonable use of production land.
- (e) the structure avoids significant adverse effects and avoids, remedies or mitigates other adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wāhi taonga and mahinga kai.

E3.3 (9) Provide for the excavation, drilling, tunnelling, thrusting or boring or other disturbance, and the depositing of any substance in, on or under the bed of a lake, river, stream or wetland, where it complies with all of the following:

- (a) there is no practicable alternative method or location for undertaking the activity outside the lake, river, stream or wetland;
- (b) the activity is required for any of the following:
 - (i) as part of an activity designed to restore or enhance the natural values of any lake, river, stream or wetland, or any adjacent area of indigenous vegetation or habitat of indigenous fauna;

	<ul style="list-style-type: none"> (ii) to maintain and/or enhance public access to, over and along any lake, river, stream or wetland and associated margins; (iii) to provide access across a lake, river, stream or wetland; (iv) for the operation, use, maintenance, repair, development or upgrade of infrastructure; (v) to restore, maintain or improve access to wharves and jetties or mooring areas, or to maintain the navigation and safety of existing channels; (vi) to reduce the risk of occurrence or the potential adverse effects of flooding, erosion, scour or sediment depositing; (vii) for the reasonable use of production land; or (viii) to undertake mineral extraction activities and mitigation and following that, offsetting can be practicably implemented. <p>(c) the disturbance avoids significant adverse effects and avoids, remedies or mitigates other adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wāhi taonga and mahinga kai.</p> <p>E3.3 (13) Avoid the reclamation and drainage of the bed of lakes, rivers, streams and wetlands, including any extension to existing reclamations or drained areas unless all of the following apply:</p> <ul style="list-style-type: none"> (a) there is no practicable alternative method for undertaking the activity outside the lake, river, stream or wetland; (b) for lakes, permanent rivers and streams, and wetlands the activity is required for any of the following: <ul style="list-style-type: none"> (i) as part of an activity designed to restore or enhance the natural values of any lake, river, stream or wetland, any adjacent area of indigenous vegetation or habitats of indigenous fauna; (ii) for the operation, use, maintenance, repair, development or upgrade of infrastructure; or (iii) to undertake mineral extraction activities; and (c) the activity avoids significant adverse effects and avoids, remedies or mitigates other adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wāhi taonga and mahinga kai.
<p>E13 – Cleanfills, managed fills and landfills</p>	<p><i>Objectives</i></p> <p>E13.2.(1) Cleanfills, managed fills and landfills are sited, designed and operated so that adverse effects on the environment, are avoided, remedied or mitigated.</p> <p>E13.2 (2) Human health is protected from the adverse effects of operational or closed cleanfills, managed fills and landfills.</p> <p><i>Policies</i></p> <p>E13.3 (1) Avoid significant adverse effects and remedy or mitigate other adverse effects of cleanfills, managed fills and landfills on lakes, rivers, streams, wetlands, groundwater and the coastal marine area.</p> <p>E13.3 (2) Require cleanfills, managed fills and landfills to be sited, and where appropriate, designed and constructed, to avoid the risk of land instability.</p> <p>E13.3 (3) Require cleanfills, managed fills and landfills to be designed and operated in accordance with relevant industry best practice.</p> <p>E13.3(4) Avoid adverse effects from new landfills.</p>

**E14 – Air
quality**

Objectives

E14.2 (1) Air quality is maintained in those parts of Auckland that have high air quality, and air quality is improved in those parts of Auckland that have low to medium air quality.

E14.2 (2) Human health, property and the environment are protected from significant adverse effects from the discharge of contaminants to air.

E14.2 (3) Incompatible uses and development are separated to manage adverse effects on air quality from discharges of contaminants into air and avoid or mitigate reverse sensitivity effects.

E14.2 (4) The operational requirements of light and heavy industry, other location-specific industry, infrastructure, rural activities and mineral extraction activities are recognised and provided for.

Policies

E14.3 (1) Manage the discharge of contaminants to air, including by having regard to the Auckland Ambient Air Quality Targets in Table E14.3.1, so that significant adverse effects on human health, including cumulative adverse effects, are avoided, and all other adverse effects are remedied or mitigated.

E14.3 (3) In the Rural – Rural Production Zone, Rural – Mixed Rural Zone, Rural – Rural Coastal Zone, Future Urban Zone, Auckland Council District Plan – Hauraki Gulf Island Rural 1-3 and Landform 1-7:

- (a) Recognise that rural air quality is generally a result of dust and odours, and other emissions generated by rural production activities;
- (b) Avoid, remedy or mitigate adverse effects of dust and odour discharge;
- (c) Provide for minor and localised elevation of dust and odour levels where the air discharge is from:
 - (i) Rural production activities or rural industry or;
 - (ii) The operation of infrastructure or location specific industry; or
 - (iii) Mineral extraction activities; or
 - (iii) Activities undertaken by the New Zealand Defence Force for training and munitions testing; or
 - (iv) For emergency services training;
- (d) Require adequate separation between use and development which discharge dust and odour and activities that are sensitive to these adverse effects.

E14.3 (6) Avoid the discharge of contaminants to air from industrial activities in rural zones and the coastal marine area except where the activity is:

- (a) Location specific, such as mineral extraction activities and mineral processing, wastewater treatment facilities, marine and port activities;
- (b) Undertaken by the New Zealand Defence Force for training and munitions testing, or for emergency services training;
- (c) Infrastructure requiring large separation distances that cannot be provided within urban areas; or
- (d) A rural industry.

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	<p>E14.3 (8) Avoid, remedy or mitigate the adverse effects on air quality from discharges of contaminants into air by:</p> <ul style="list-style-type: none"> (a) Using the best practicable option for emission control and management practices that are appropriate to the scale of the (b) discharge and potential adverse effects; or (c) Adopting a precautionary approach, where there is uncertainty and a risk of significant adverse effects or irreversible harm to the environment from air discharges. <p>E14.3 (9) Avoid, remedy or mitigate the adverse effects on air quality beyond the boundary of the premises where the discharge of contaminants to air is occurring, in relation to:</p> <ul style="list-style-type: none"> (a) Noxious or dangerous effects on human health, property or the environment from hazardous air pollutants; or (b) Overspray effects on human health, property or the environment. <p>E14.3 (10) Require large scale combustion sources that discharge contaminants to air to avoid, remedy or mitigate any adverse effects on aircraft safety.</p>
<p>E15 – Vegetation management</p>	<p><i>Objectives</i></p> <p>E15.2 (1) Ecosystems services and indigenous biological diversity values, particularly in sensitive environments, and areas of contiguous indigenous vegetation cover, are maintained or enhanced while providing for appropriate subdivision, use and development.</p> <p>E15.2 (2) Indigenous biodiversity is restored and enhanced in areas where ecological values are degraded, or where development is occurring</p> <p><i>Policies</i></p> <p>E15.3 (1) Protect areas of contiguous indigenous vegetation cover and vegetation in sensitive environments including the coastal environment, riparian margins, wetlands, and areas prone to natural hazards.</p> <p>E15.3 (2) Manage the effects of activities to avoid significant adverse effects on biodiversity values as far as practicable, minimise significant adverse effects where avoidance is not practicable, and avoid, remedy or mitigate any other adverse effects on indigenous biological diversity and ecosystem services, including soil conservation, water quality and quantity management, and the mitigation of natural hazards.</p> <p>E15.3(3) Encourage the offsetting of any significant residual adverse effects on indigenous vegetation and biodiversity values that cannot be avoided, remedied or mitigated, through protection, restoration and enhancement measures, having regard to Policy E15.3(4) below and Appendix 8 Biodiversity offsetting.</p>
<p>E26 – Infrastructure</p>	<p>E26.2 Network utilities and electricity generation</p> <p><i>Objectives</i></p> <p>E26.2.1 (1) The benefits of infrastructure are recognised.</p> <p>E26.2.1 (3) Safe, efficient and secure infrastructure is enabled, to service the needs of existing and authorised proposed subdivision, use and development.</p> <p>E26.2.1 (4) Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.</p>

	<p>E26.2.1 (8) The use and development of renewable electricity generation is enabled.</p> <p><i>Policies</i></p> <p>E26.2.2 (1) Recognise the social, economic, cultural and environmental benefits that infrastructure provides, including:</p> <ul style="list-style-type: none"> (a) enabling enhancement of the quality of life and standard of living for people and communities; (b) providing for public health and safety; (c) enabling the functioning of businesses; (d) enabling economic growth; (e) enabling growth and development; (f) protecting and enhancing the environment; (g) enabling the transportation of freight, goods, people; and (h) enabling interaction and communication. <p>E26.2.2 (2) Provide for the development, operation, maintenance, repair, upgrade and removal of infrastructure throughout Auckland by recognising:</p> <ul style="list-style-type: none"> (a) functional and operational needs; (b) location, route and design needs and constraints; (c) the complexity and interconnectedness of infrastructure services; (d) the benefits of infrastructure to communities with in Auckland and beyond; (e) the need to quickly restore disrupted services; and (f) its role in servicing existing, consented and planned development. <p>E26.2.2 (5) Consider the following matters when assessing the effects of infrastructure:</p> <ul style="list-style-type: none"> (a) the degree to which the environment has already been modified; (b) the nature, duration, timing and frequency of the adverse effects; (c) the impact on the network and levels of service if the work is not undertaken; (d) the need for the infrastructure in the context of the wider network; and (e) the benefits provided by the infrastructure to the communities within Auckland and beyond. <p>E26.2.2 (12) Provide for renewable electricity generation activities to occur at different scales and from different sources, including small and community-scale renewable electricity generation activities.</p>
<p>E33 – Industrial and trade activities</p>	<p><i>Objectives</i></p> <p>E33.2.(1) Industrial and trade activities are managed to avoid adverse effects on land and water from environmentally hazardous substances and discharge of contaminants, or to minimise adverse effects where it is not reasonably practicable to avoid them</p> <p><i>Policies</i></p> <p>E33.3.(1) Manage the use of land for industrial or trade activities to prevent or minimise any adverse effects of storage, use or disposal of environmentally hazardous substances.</p>

**Chapter D
provisions –
Overlays**

Relevant Regional and District Plan objectives and policies

	<p>E33.3.(2) Require industrial or trade activities to have, where reasonably practicable, onsite management systems, processes, containment, treatment, or disposal by lawful means.</p> <p>E33.3.(3) Require measures to be implemented, where contaminants cannot be disposed as trade waste to the wastewater network or contained on site, to minimise adverse effects on land and water including:</p> <ul style="list-style-type: none"> (a) reducing contaminant volumes and concentrations as far as practicable; and (b) applying measures, including treatment, management procedures, monitoring, controls, or offsite disposal, having regard to the nature of the discharge and the sensitivity of the receiving environment.
<p>H19.2 – All rural zones</p>	<p>General rural Objectives</p> <p>H19.2.1 (1) Rural areas are where people work, live and recreate and where a range of activities and services are enabled to support these functions.</p> <p>H19.2.1 (2) Rural production activities are provided for throughout the rural area while containing adverse environmental effects on site.</p> <p><i>Policies</i></p> <p>H19.2.2 (1) Enable activities based on use of the land resource and recognise them as a primary function of rural areas.</p> <p>H19.2.2 (2) Require rural production activities to contain and manage their adverse environmental effects on-site to the fullest extent practicable.</p> <p>H19.2.2 (5) Enable a range of rural production activities and a limited range of other activities in rural areas by:</p> <ul style="list-style-type: none"> (a) separating potentially incompatible activities such as rural production and rural lifestyle living into different zones; (b) avoiding or restricting rural subdivision for activities not associated with rural production in areas other than those subdivision provided for in E39 Subdivision – Rural; (c) managing the effects of activities in rural areas so that: <ul style="list-style-type: none"> (i) essential infrastructure can be funded, coordinated and provided in a timely, integrated, efficient and appropriate manner; and (ii) reverse sensitivity effects do not constrain rural production activities. (d) acknowledging that, in some circumstances, the effective operation, maintenance, upgrading and development of infrastructure may place constraints on productive land and other rural activities; or (e) providing for tourism and activities related to the rural environment. <p>H19.2.5 (3) The rural economy and the well-being of people and local communities are maintained or enhanced by social, cultural and economic non-residential activities, while the area’s rural character and amenity is maintained or enhanced.</p>
	<p>Rural character, amenity and biodiversity values</p> <p><i>Objectives</i></p> <p>H19.2.3 (1) The character, amenity values and biodiversity values of rural areas are maintained or enhanced while accommodating the localised character of</p>

Chapter D provisions – Overlays	Relevant Regional and District Plan objectives and policies
	<p>different parts of these areas and the dynamic nature of rural production activities.</p> <p>H19.2.3 (2) Areas of significant indigenous biodiversity are protected and enhanced.</p> <p><i>Policies</i></p> <p>H19.2.4 (2) Recognise the following are typical features of the Rural – Rural Production Zone, Rural – Mixed Rural Zone and Rural – Rural Coastal Zone and will generally not give rise to issues of reverse sensitivity in these zones:</p> <ul style="list-style-type: none"> (a) the presence of large numbers of farmed animals and extensive areas of plant, vine or fruit crops, plantation forests and farm forests; (b) noise, odour, dust, traffic and visual effects associated with use of the land for farming, horticulture, forestry, mineral extraction and cleanfills; (c) the presence of existing mineral extraction activities on sites zoned as Special Purpose – Quarry Zone; (d) accessory buildings dot the landscape, particularly where farming activities are the dominant activity; and (e) activities which provide for the relationship of Mana Whenua to their ancestral land and taonga.
	<p>Rural industries, rural commercial services and non-residential activities</p> <p><i>Objectives</i></p> <p>H19.2.5 (4) Industries, services and non-residential activities of an urban type and scale unrelated to rural production activities are not located in rural zones.</p> <p><i>Policies</i></p> <p>H19.2.6 (2) Manage rural industries, rural commercial services and other non-residential activities to:</p> <ul style="list-style-type: none"> (a) avoid creating reverse sensitivity effects; (b) contain and manage adverse effects on-site; and (c) avoid, remedy or mitigate adverse effects on traffic movement and the road network.
H19.3 – Rural production zone	<p><i>Objectives</i></p> <p>H19.3.2 (1) A range of rural production, rural industries, and rural commercial activities take place in the zone.</p> <p>H19.3.2 (2) The productive capability of the land is maintained and protected from inappropriate subdivision, use and development.</p>

Figure 13 - Relevant Regional and District Plan objectives and policies

203. The above regional and district plan provisions of the Unitary Plan are relevant in assessing PC42. However, I note that there is no legal requirement for a regional plan change to 'give effect' or be 'consistent' with an existing regional plan. Nor so for a district plan. A plan change is inherently not consistent with the existing plan and the RMA enables plan changes to occur.

204. However, I do consider that the proposed precinct provisions under PC42 do not significantly depart from the policy direction of the regional or district plan. Overall, I generally agree with the applicant's assessment of the proposed precinct against the regional plan in section 5.1.1 and Appendix E of the private plan change request. Although I note that where I do not agree I have recommended changes to the precinct provisions as shown in **Attachment 1** and **Attachment 2** of this report.
205. In my view, the approval of the proposed precinct would not set any precedent or pose a threat to the plan's integrity. A precedent can only occur in 'like for like' cases and in my view, it would be difficult to replicate this proposal. The specific characteristics of the site and the tailored precinct provisions mean that this proposed precinct is a true exception. The purpose of a precinct is to enable exceptions to the standard zoning provisions for site specific purposes.
206. Should another private plan change request emerge for a landfill, I do not think that any approval of PC42 would impact on the likelihood of that plan change being approved or declined. It would be assessed on its merits.

10.5. Other relevant legislation

10.5.1. Ngāti Manuhiri Claims Settlement Act (2012)

207. The purpose of this Act is to give effect to certain provisions of the deed of settlement that settles the historical claims of Ngāti Manuhiri. It is relevant to PC42 for a number of reasons including that the Act demonstrates that the Crown acknowledges the statements of association made by Ngāti Manuhiri of their particular cultural, spiritual, historical, and traditional association with areas (statutory areas).
208. These statutory areas include Tohitohi o Reipae which is in the vicinity of the proposed precinct site, and the Hōteo River to which surface water from the precinct site feeds into. These areas are also listed in *Appendix 21 Treaty settlement legislation – Statutory acknowledgements* of the Unitary Plan.
209. The Ngāti Manuhiri Settlement Trust have lodged a submission (#138) on PC42 seeking that it be declined.

10.5.2. Ngāti Whātua o Kaipara Claims Settlement Act (2013)

210. The purpose of this Act is to record the acknowledgements and apology offered by the Crown to Ngāti Whātua o Kaipara in the deed of settlement and to give effect to certain provisions of the deed of settlement dated 9 September 2011, which is a deed to settle the historical claims of Ngāti Whātua o Kaipara.
211. This Act is relevant to PC42 for a number of reasons including that the Act demonstrates that the Crown acknowledges the statements of association made by Ngāti Whātua o Kaipara of their particular cultural, spiritual, historical, and traditional association with areas (statutory areas).
212. The statutory areas include a Coastal Statutory Acknowledgement Area over the southern part of the Kaipara Harbour. This is where surface water from the precinct site eventually drains into. This area is also listed in *Appendix 21 Treaty settlement legislation – Statutory acknowledgements* of the Unitary Plan.
213. A number of iwi and hapū groups associated with Ngāti Whātua o Kaipara have made submissions on PC42 seeking that it be declined. These groups are Te Rūnanga o Ngāti Whātua (#132), Ngā Māunga Whakahii o Kaipara Development Trust (#149), Puatahi Marae (#361), and Ngāti Rango (#412).

10.5.3. Te Uri o Hau Claims Settlement Act (2002)

214. The purpose of this Act is to record the apology given by the Crown to Te Uri o Hau in the deed of settlement executed on 13 December 2000 by the Minister in Charge of Treaty of Waitangi Negotiations, the Honourable Margaret Wilson, for the Crown, and Sir Graham Stanley Latimer, Morehu Kena, Jimmy Maramatanga Connelly, William Harry Pomare, Russell Rata Kemp, Rawson Sydney Ambrose Wright, and Tapihana Shelford, as mandated negotiators for Te Uri o Hau. The Act is also to give effect to certain provisions of that deed of settlement, being a deed that settles Te Uri o Hau historical claims.
215. This Act is relevant to PC42 for a number of reasons including that the Act demonstrates that the Crown acknowledges the statement by Te Uri o Hau of the cultural, spiritual, historic, and traditional association of Te Uri o Hau with the Kaipara Harbour.
216. The Kaipara Harbour Coastal Area is where surface water from the precinct site eventually drains into. This area is also listed in *Appendix 21 Treaty settlement legislation – Statutory acknowledgements* of the Unitary Plan.
217. Two groups associated with Te Uri o Hau have made submissions on PC42 seeking that it be declined. These groups are Environs Holding Ltd environmental subsidiary of Te Uri o Hau Settlement Trust (#35) and the Tinopai Resource Management Unit (#398).

10.5.4. Ngāti Whātua Ōrākei Claims Settlement Act (2012)

218. The purpose of this Act is to give effect to certain provisions of the deed of settlement, which is a deed that settles the historical claims of Ngāti Whātua Ōrākei. It is relevant to PC42 as Ngāti Whātua Ōrākei have made a submission (#45) seeking that PC42 be declined. Their submission acknowledges that the proposed precinct site is not within the rohe of Ngāti Whātua Ōrākei and the purpose of the submission is to support related hapū who are the ahi kā at Dome Valley; namely Ngāti Rango and Te Uri O Hau.

10.5.5. Waste Minimisation Act (2008)

219. This Act encourages a reduction in the amount of waste generated and disposed of in New Zealand. The aim is to reduce the environmental harm of waste and provide economic, social and cultural benefits for New Zealand.
220. To achieve its aims, the Act:
- imposes a levy on all waste disposed of in landfills
 - establishes product stewardship schemes
 - requires product stewardship for certain ‘priority products’
 - allows for regulations to be made to control the disposal of products, materials or waste, require take-back services, deposit fees or labelling of products
 - allows for regulations to be made that make it mandatory for certain groups (e.g. landfill facility operators) to report on waste to improve information on waste minimisation
 - clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation
 - establishes the Waste Advisory Board to give independent advice to the Minister for the Environment on waste minimisation issues.

221. Further information on some of these initiatives is provided in section 3.2 of this report.
222. The Act requires councils to prepare a waste management and minimisation plan. This plan must consider the following methods of waste management and minimisation (which are listed in descending order of importance):
- reduction
 - reuse
 - recycling
 - recovery
 - treatment
 - disposal
223. It is clear that waste disposal to a landfill is in the lowest tier of the ‘waste hierarchy’. However, it is important to note that the Act does not prohibit disposal, and therefore does not prohibit new landfills.
224. In my view, the Act does not prevent the proposed Auckland Regional Landfill precinct being established (with the potential for a future resource consent for a landfill).

10.5.6. Climate Change Response (Zero Carbon) Amendment Act (2019)

225. The Climate Change Response (Zero Carbon) Amendment Act 2019⁶⁶ provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:
- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° celsius above pre-industrial levels
 - allow New Zealand to prepare for, and adapt to, the effects of climate change.
226. The changes do four key things.
- set a new domestic greenhouse gas emissions reduction target for New Zealand
 - establish a system of emissions budgets to act as stepping-stones towards the long-term target
 - require the Government to develop and implement policies for climate change adaptation and mitigation
 - establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals.
227. There will be a transitional period to 2021 to get the new provisions up and running including the first National Climate Change Risk Assessment and a provisional emissions budget for 2021–2025.
228. This Act was referred to by a number of submitters⁶⁷ opposing the proposed Auckland Regional Landfill precinct. However, it seems clear that what submitters were wanting was for the effects of a proposed landfill *on* climate change (i.e. increased greenhouse gas emissions from trucks and gas release from the landfill itself) to be considered in the private plan change. As outlined in section 10.7.4 of this report and in **Attachment 10**, this is not currently possible under the RMA.

⁶⁶ Previously known as the Zero Carbon Bill.

⁶⁷ E.g. Submission #378 refers to “Zero carbon legislation”.

10.5.7. Wildlife Act (1953)

229. All indigenous bats, birds, lizards and some invertebrates (namely all Paryphanta - kauri snails) are fully protected under the Wildlife Act 1953. It is an offence to disturb, harm, or remove them without a permit from the Minister of Conservation. This includes the deliberate disturbance of potential habitat even if the presence of native species has not been specifically surveyed. WMNZ must abide by the Wildlife Act which is administered by the Department of Conservation and is separate to this private plan change process under the RMA.

10.6. The Auckland Plan (2018)

230. In considering a plan change, a territorial authority must have regard to plans and strategies prepared under other Acts. The Auckland Plan 2050 was prepared under section 79 of the Local Government (Auckland Council) Act 2009 and is a relevant strategy document that council should have regard to in considering PC42.

231. The Auckland Plan 2050 was adopted in 2018 and sets the direction for how Auckland will grow and develop over the next 30 years. It takes over from the 2012 Auckland Plan which set the scene for the development of the Unitary Plan. Building on this the Auckland Plan 2050 acknowledges the key challenges for Auckland as high population growth, sharing prosperity among all Aucklanders and reducing environmental damage.

232. In responding to these, it aims to deliver a better Auckland through six high level outcomes which are delivered through the Development Strategy. Below is a summary of the matters in the Auckland Plan 2050 that are relevant in considering PC42. Overall, it is my opinion that PC42 (as modified in **Attachment 1** and **Attachment 2**) is generally consistent with the Auckland Plan 2050.

Outcomes	Matters	Discussion
Belonging and participation	Focus area 7: Recognise the value of arts, culture, sports and recreation to quality of life	The proposed precinct is near to existing and proposed recreational facilities (e.g. public reserves, mountain biking tracks). Recreation access through current unformed legal roads could be affected by a potential landfill. However, the provisions of PC42 require a fully notified discretionary resource consent to establish a landfill on the site and any effects on recreational facilities can be assessed during a resource consent process.
Māori Identity and Wellbeing	Direction 3: Recognise and provide for te Tiriti o Waitangi outcomes Focus area 5: Advance mana whenua rangatiratanga in leadership and decision-making and provide for customary rights	The proposed precinct has raised significant concerns from iwi groups regarding their important relationship to the whenua and wai. The provisions of PC42 require a fully notified discretionary resource consent to establish a landfill on the site. The precinct includes some provisions to ensure that cultural effects are considered through the resource consent process and I have recommended some further provisions are added to the precinct to reinforce this. Overall, I consider that there is scope for

Outcomes	Matters	Discussion
		cultural effects to be considered through any resource consent application for a landfill under the proposed precinct.
Transport and Access	<p>Direction 1: Better connect people, places, goods and services</p> <p>Direction 3: Maximise safety and environmental protection</p> <p>Focus area 6: Move to a safe transport network free from death and serious injury</p> <p>Focus area 7: Develop a sustainable and resilient transport system</p>	<p>The potential landfill development in the proposed precinct would access directly onto SH1. In my view, it is appropriate for an activity that generates a high number of heavy vehicle movements to utilise the state highway network as much as possible rather than local roads.</p> <p>There is potential for the increase in heavy vehicle movements to compromise the safety and resilience of the transport system. However, there are safety improvements currently underway on SH1 through the Dome Valley (addressing safety) and a motorway extension from Warkworth to Wellsford is currently going through a Notice of Requirement process (addressing resilience).</p>
Environment and Cultural Heritage	<p>Direction 1: Ensure Auckland's natural environment and cultural heritage is valued and cared for</p> <p>Direction 2: Apply a Māori world view to treasure and protect our natural environment (taonga tuku iho)</p> <p>Direction 3: Use Auckland's growth and development to protect and enhance the natural environment</p> <p>Direction 4: Ensure Auckland's infrastructure is future-proofed</p>	<p>The potential landfill development in the proposed precinct would have some impacts on the natural environment that would be unable to be avoided (e.g. stream reclamation). Other environmental effects could be remedied or mitigated through construction and operation methods.</p> <p>A number of iwi groups have opposed PC42 and the Auckland Plan recognises that mana whenua have a unique relationship with the natural environment as kaitiaki. They hold an enduring relationship with the land, marine and freshwater environments and have deep and valuable knowledge.</p> <p>Their body of knowledge – both tangible and intangible – cultural practices and heritage are all linked to the whenua and its life.</p> <p>The provisions of PC42 require a fully notified discretionary resource consent to establish a landfill on the site. The precinct includes some provisions to ensure that cultural effects are considered through the resource consent process and I have recommended some further provisions are added to the precinct to reinforce this. Overall, I consider that there is scope for cultural effects to be considered through any resource consent application for a landfill under the proposed precinct.</p> <p>The Auckland Plan also notes under the Environment and Cultural Heritage outcome that we need new ways of delivering core services such as turning waste into resources. As discussed in section 3.4.3 of this report, the assessment of, and preference for, alternative</p>

Outcomes	Matters	Discussion
		waste management methods is not within the scope of what can be recommended in this report.

Figure 14 - Relevant provisions of the Auckland Plan 2050

10.7. Any relevant management plans and strategies prepared under any other Act

233. There are a number of other plans and strategies considered relevant to PC42 which are discussed below. Sections 66(2)(c)(i) and 74(2)(b)(i) of the RMA state that the council must have regard to such strategies when considering a plan change.

10.7.1. The New Zealand Waste Strategy (2010)

234. The New Zealand Waste Strategy provides high-level direction to guide the use of the tools available to manage and minimise waste in New Zealand. The Strategy also allows for a flexible approach that can be adapted to different situations.

235. The strategy is high-level and does not set any specific targets or goals around landfills. The strategy has two goals:

Goal 1: Reducing the harmful effects of waste

When planning waste management and minimisation activities, local government, businesses and communities should assess the risk of harm to the environment and human health from waste to identify and take action on those wastes of greatest concern.

Goal 2: Improving the efficiency of resource use

When planning waste management and minimisation activities, local government, businesses and communities should improve the efficiency of resource use to reduce the impact on the environment and human health and capitalise on potential economic benefits.

236. In my view, PC42 aligns with Goal 1 as a landfill can be a method to concentrate waste into one location where it can be managed safely to reduce the harmful effects of waste (rather than the wide dispersal of waste). In addition, the proposed Auckland Regional Landfill precinct requires a resource consent for a landfill. Therefore, the proposed precinct still requires a potential landfill to go through a robust assessment around the potential harmful effects of waste. With regards to the second goal, PC42 is not directly relevant as it is focussed on the production and consumption of resources (rather than managing the waste). I also note that the waste reduction measures in the strategy are not presented as negating the need for landfills.

10.7.2. The Auckland Waste Management and Minimisation Plan (2018)

237. The Auckland Waste Management and Minimisation Plan (2018) has a vision stating that “Auckland aspires to be Zero Waste by 2040, taking care of people and the environment, and turning waste into resources.” Zero waste is about “making the most of the resources we have, using them for their highest and best value, and sending nothing to landfill or to incinerators.”

238. However, the plan does stress that zero waste is a long-term goal. It will be a journey to achieve zero waste, with a goal to reduce waste to landfill by 30% by 2027, and to zero by 2040. This suggests that in the interim, landfills will still be required.

239. The plan identifies landfill disposal as a poor waste management option, particularly in the context of managing organic wastes which decompose over time and release methane. Disposing residual waste is at the least preferred end of the waste hierarchy (see Figure 15 below). However, while disposal to landfill is the least preferred method, the plan acknowledges that “it’s not yet technically or economically feasible to divert all materials from landfill”. The plan refers to “continuing to manage residual waste effectively and efficiently while progressively reducing Auckland’s reliance on landfills”. The plan also notes that “it is important Auckland continues to manage residual waste effectively for public and environmental health and safety reasons”.

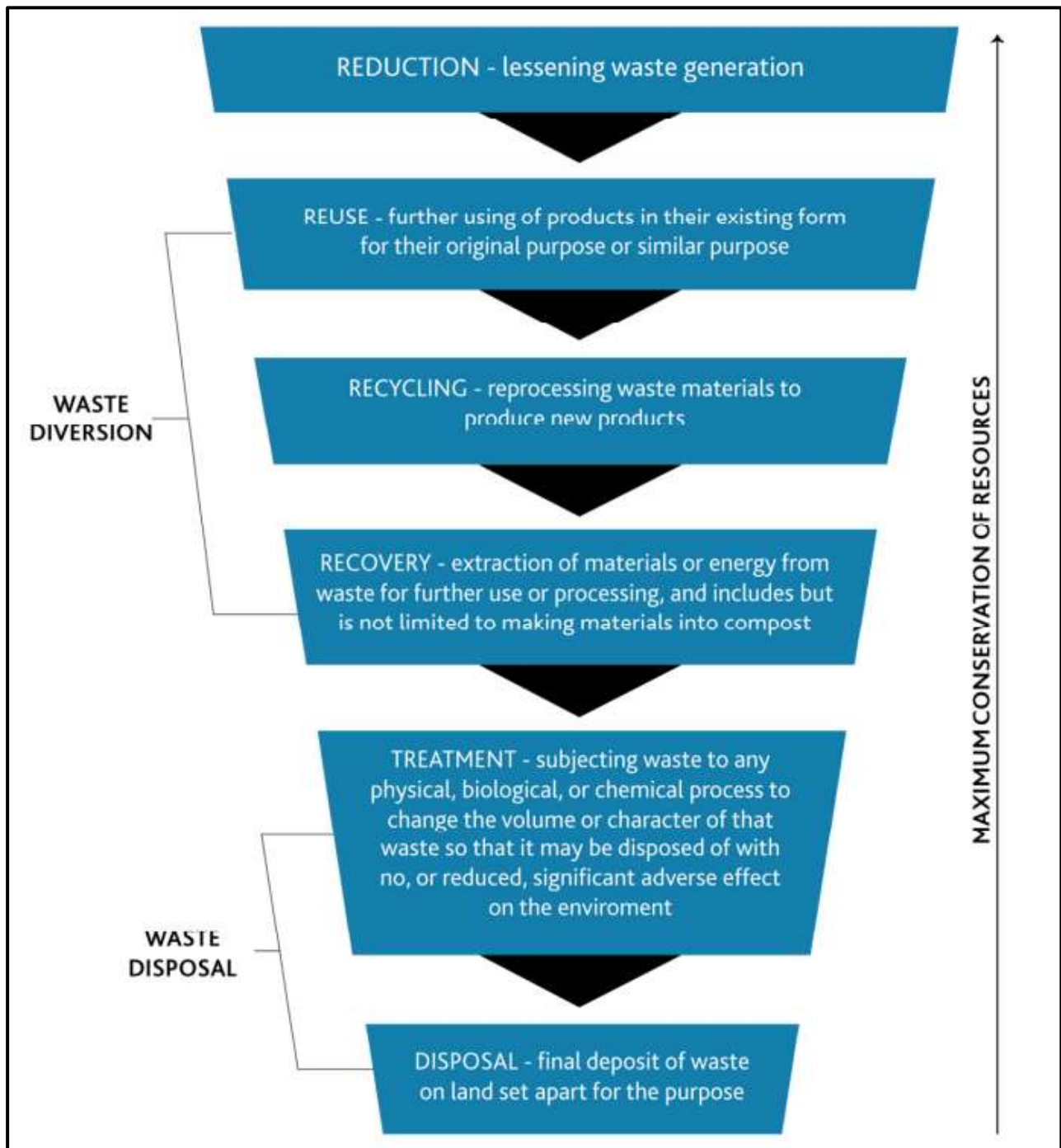


Figure 15 - Waste Hierarchy diagram from Auckland Waste Management and Minimisation Plan (2018)

240. The Auckland Waste Management and Minimisation Plan acknowledges that landfills will still have a role to play in the medium term until Auckland reaches the goal of Zero Waste. This is especially so as it is still more economical to send waste to landfill than to divert it into other productive uses (due to the currently low waste levy set by central government and the higher costs of alternatives such as recycling). The plan includes a priority for the council to lobby the government to increase the waste levy. Section 3.2 of this report covers the Government's recent actions to increase the waste levy over time.
241. In my view, PC42 is not inconsistent with the Auckland Waste Management and Minimisation Plan. While aiming for a goal of zero waste, the plan accepts that further time and effort is needed to achieve this and in the interim landfills still have an important role to play in managing Auckland's waste. I also note that WMNZ intends to operate a potential landfill in Wayby Valley from 2028, meaning there is still some twelve years before the aspirational zero waste target is hoped to be met in 2040.

10.7.3. Low Carbon Strategic Action Plan (2014)

242. Some submitters referenced Auckland Council's the Low Carbon Strategic Action Plan. However, this plan has now been superseded by the recently adopted Auckland Climate Plan (2020). The Auckland Climate Plan is assessed below.

10.7.4. Auckland's Climate Plan (2020)

243. Auckland's Climate Plan is founded on three key elements to drive climate action:
- An overarching Tāmaki response approach reflecting
 - the uniqueness of Tāmaki Makaurau
 - the need to embed issues like equity, te ao Māori and a strong rangatahi voice.
 - A focus on clear greenhouse gas emissions reduction targets for the region, including:
 - halving emissions by 2030
 - reaching net zero emissions by 2050.
 - Preparing Auckland for the impacts of climate change, including a stronger focus on:
 - how we will adapt to climate change
 - taking a precautionary approach
 - preparing for our current emissions pathway and the prospect of a 3.5 degrees warmer region.
244. A number of submitters seeking that PC42 be declined have raised the issue of climate change with regards to the additional distance that trucks will need to travel to the landfill (resulting in increased greenhouse gas emissions), and the release of greenhouse gases from the proposed landfill itself.
245. I generally accept that a large new landfill would likely conflict with the Auckland Climate Plan's goal of halving greenhouse gas emissions by 2030 and reaching net zero emissions by 2050. However, Auckland's Climate Plan does not specifically prohibit new landfills. Instead, the plan focuses its actions on reducing, reusing, and recycling waste to reduce the total volume of waste that reaches a landfill (i.e. reducing food waste, construction waste, and household waste).
246. Specific waste reduction actions identified in the Auckland Climate Plan include:

- Action B7: develop and support initiatives to minimise construction and demolition waste (Built Environment priority)
 - Action E6: manage our resources to deliver a zero waste, circular economy (Economy priority)
 - Action F3: prevent and reduce (food) waste and maximise the value of surplus food
247. These actions seek to reduce and reuse construction and demolition waste from the construction and building sector, focus on creating a circular economy in business and industry, and to reduce food waste from homes and the food and beverage industry.
248. In light of the above (and the further discussion below around scope), I do not consider that PC42 would be contrary to Auckland’s Climate Plan.

Ability to consider climate change in a private plan change process

249. At present, s70A of the RMA specifically prohibits Auckland Council from making rules in the Unitary Plan regarding or considering the climate change effects of any greenhouse gas emissions.

70A Application to climate change of rules relating to discharge of greenhouse gases

Despite section 68(3), when making a rule to control the discharge into air of greenhouse gases under its functions under section 30(1)(d)(iv) or (f), a regional council must not have regard to the effects of such a discharge on climate change, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases, either—

- (a) in absolute terms; or
- (b) relative to the use and development of non-renewable energy.

250. This section was inserted by the Resource Management (Energy and Climate Change) Amendment Act 2004. This Act also introduced Section 7(i) of the RMA.

7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

- ...
- (i) the effects of climate change:
- ...

251. It needs to be emphasised that ‘other matter (i)’ considers the *effects of* climate change from a development (e.g. sea-level rise causing inundation of a proposed subdivision) rather than the *effects on* climate change that a development may cause/contribute to (e.g. increased greenhouse gas emissions). This important distinction is summarised below:

“The requirement to have particular regard to the effects of climate change is aimed at considering the effects of climate change on the application, rather than the effects of the application on climate change [see: Upland Landscape Protection Society Inc v Clutha District Council (NZEnvC C085/08, 25 July 2008)]. Furthermore, sections 70A and 104E of the Resource Management Act clearly state that a decision maker cannot have regard to the effects of a discharge into air of greenhouse gases on climate change (except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases). There is a clear legislative policy of nationalising New Zealand’s approach to the emission of

greenhouse gases [see: Genesis Power Ltd v Greenpeace NZ Inc [2008] 1 NZLR 803].”⁶⁸

252. The RMA Amendment Act 2020 will alter assessments of environmental effects for applications considered after 31 December 2021. This is the date from which s70A of the RMA shall be repealed, requiring a consideration of climate change effects from the discharges of greenhouse gases. As PC42 is being considered before 31 December 2021, s70A still applies and therefore the Unitary Plan cannot contain rules considering the climate change effects from any greenhouse gas emissions.
253. A memo from Mr Crimmins, a Senior Specialist in Auckland Council’s Contamination, Air & Noise Team is included in **Attachment 10** and gives an overview of the climate change considerations for both PC42 and the related application for resource consents.
254. While the effects on climate change from PC42 cannot be considered under the RMA, it is important to be aware that these effects are considered at a national scale through the New Zealand Emissions Trading Scheme.
255. Greenhouse gas emissions from municipal landfills are covered by the scheme and they need to offset their emissions through purchasing ‘New Zealand Units’. One New Zealand Unit represents one metric tonne of carbon dioxide or carbon dioxide equivalent (i.e. another greenhouse gas that does as much damage as one tonne of carbon dioxide).
256. Therefore, while it is not currently possible to consider the greenhouse gas emissions from the proposed landfill through PC42, they are covered and offset through the New Zealand Emissions Trading Scheme.
257. It is noted that there is one relevant exception to the above discussion around not being able to consider effects on climate change. That is, section 70A of the RMA does enable the consideration of the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases. This is covered in section 10.2.2 of this report.

11. ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

258. Clause 22 of Schedule 1 to the RMA requires private plan changes to include an assessment of environmental effects that are anticipated by the Plan Change, taking into account the Fourth Schedule of the RMA.
259. An assessment of actual and potential effects on the environment is included in the private plan change request. PC42 identifies and evaluates the following actual and potential effects relating to the following topics:
 - Cultural effects
 - Freshwater ecology
 - Terrestrial ecology
 - Groundwater and aquifers
 - Sediment discharge from land disturbance

⁶⁸ Environment Guide. (2018). *Section 7 – Other matters*.
<http://www.environmentguide.org.nz/rma/principles/section-7-other-matters/>

- Stormwater / flooding
- Industrial trade activity and stormwater quality
- Transport
- Geotechnical
- Waste acceptance criteria and environmental risk
- Landfill engineering and landfill operations
- Air quality
- Noise
- Health risk
- Landscape and visual
- Historic heritage
- Economic
- Positive effects

11.1. Cultural effects

Application

260. Section 4.11 of the private plan change request provides the applicant's discussion around cultural values. WMNZ state that consideration was given to the location of marae and areas of significance to iwi during the site selection process. However, it is noted that the areas of significance were derived from publicly available datasets and information. As the site selection process was confidential, WMNZ did not engage with iwi at that stage.
261. WMNZ note that the proposed precinct does not take precedence over any of the objectives and policies within the Unitary Plan relating to mana whenua values. Therefore, these would still apply for a resource consent under the proposed precinct.
262. The consultation that WMNZ undertook with iwi groups is outlined in section 12.1 of this report. This section outlines some of the main themes from the feedback and states that all but one iwi group who submitted on PC42 were not satisfied with the level of consultation by WMNZ.
263. Based on the feedback received from iwi during the early stages of the process, WMNZ emphasise in their private plan change request that the precinct has included provisions to ensure that cultural issues are considered during a resource consent process. The three provisions that WMNZ highlights in section 4.11 of its private plan change request are:

Objective 6

- (6) The mauri of freshwater and indigenous biodiversity within those areas of the precinct not required for operations associated with the development and continued operation of the Auckland Regional Landfill is maintained and consistent with being enhanced over time.

Policy 2

- (2) Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied or mitigated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan's Accidental Discovery Rule (E11.6.1).

Policy 3

- (3) Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
- a. adverse effects on the quality of freshwater, including from contamination and sediment;
 - b. adverse effects from contaminants, and the potential for these to enter freshwater from both point and non-point sources;
 - c. adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and
 - d. adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply;
 - e. adverse effects on the quality of air, including from the discharge of contaminants and odour;
264. WMNZ states that Objective 6 has been included in the proposed precinct provisions in recognition of potential effects on cultural values, including the recognised importance of the Hōteu River. Policy 2 is intended to ensure that an assessment of effects on mana whenua values is undertaken as part of any resource consent under the precinct. Policy 3 is included in recognition of the potential effects of discharges on cultural values.
265. WMNZ state that they are engaging with iwi so that their culture and traditions, and their ancestral land and water are considered and that the principles of the Treaty of Waitangi are taken into account. WMNZ pledge that consultation will continue throughout the PC42 process and beyond.
266. One Cultural Values Assessment ('CVA') has been provided to WMNZ from Ngāti Manuhiri. WMNZ state they are working with Ngāti Manuhiri to respond to the matters raised in their CVA as part of the parallel resource consent process. If other CVAs are provided by mana whenua, WMNZ state they will undertake the same process with those groups.

Views of mana whenua

267. WMNZ reports that the main themes from the initial discussions with the different iwi groups were around the matters outlined below:
- The cultural sensitivity of the area, the significance of the Hōteu River, a mitigation package, relationships with iwi groups, and progress towards an agreement for iwi involvement in the proposed project (Ngāti Manuhiri)
 - The potential effects of sedimentation in the Kaipara Harbour and contaminants leaking into waterways (Ngāti Whātua o Kaipara)
 - The potential adverse effects on the extensive stream and river system, aquifer, and the Hōteu River which flows to the Kaipara harbour, with particular concern about the long term legacy that would remain when the landfilling is finished (Ngāti Rango)
 - Sediment in the Hōteu River, potential leakage from landfill liners, potential impact on the Kaipara moana, freshwater quality, climate change, the very long-term

prospects for containment of the waste, and what the site will finally look like (Te Rūnanga o Ngāti Whātua)

268. In addition to feedback above, WMNZ also received a CVA from Ngāti Manuhiri. The CVA breaks down the potential cultural effects into seven key themes as identified by Ngāti Manuhiri; whenua (land), wai (water), hau (air), biodiversity, wāhi tapu and taonga, social, economic and cultural wellbeing, and future management. These are identified as key areas of importance to Ngāti Manuhiri.
269. A number of iwi groups have lodged submissions on PC42 as below:
- Environs Holding Ltd environmental subsidiary of Te Uri o Hau Settlement Trust (#35)
 - Ngāti Whātua Ōrākei (#45)
 - Te Rūnanga o Ngāti Whātua (#132)
 - Ngāti Manuhiri Settlement Trust (#138)
 - Te Ohu Kaimoana (#143)
 - Ngā Māunga Whakahii o Kaipara Development Trust (#149)
 - Puatahi Marae (#361)
 - Tinopai Resource Management Unit (#398)
 - Ngāti Rango (#412)
270. The cultural effects raised in these submissions are outlined below under each group name. It is emphasised that this section contains just a summary of the full submission from each group. A full reading of the submission is required to gain further context. It is also likely that further explanation and insight will be gained from the iwi groups speaking to their submissions at the hearing. I also note that cultural effects raised in other submissions are addressed in section 14.1.10 and 14.8 of this report.

Te Uri o Hau Settlement Trust (#35)

271. Te Uri o Hau are opposed to PC42 and seek that the plan change be declined in its entirety. They consider that there would be significant actual and potential adverse effects on the environment from PC42 including:
- Adverse cultural effects to mana whenua and the related cultural landscape where the proposal is located.
 - Intergenerational impacts including future generations impacted by the long-term landfill legacy.
 - Adverse biodiversity effects.
 - Impacts on freshwater, including Te Awa Hōteu and its catchments, and risk of discharge of contaminants to Te Awa Hōteu and Kaipara Moana.
 - Discharge (and unacceptable risk of discharge) of contaminants to water, land and air.
 - Adverse impacts to Papatūānuku and mauri.
 - Significant stream diversions & reclamations (exceeding 15.4 km).
 - Leachate (water and landfill gas).
 - Climate change and greenhouse gas emissions.
 - Intrinsic values, amenity and quality of environment.
 - Landscape and natural character.
 - Traffic generated by the proposal.
272. Te Uri o Hau state that the proposal has not assessed the relevant cultural effects from all impacted mana whenua and tangata whenua, and note that they have not provided a CVA. They also consider that alternative waste management options should be examined further before consenting a landfill.

273. Should PC42 be approved, Te Uri o Hau state that substantial amendments are required to the provisions and these should address cultural mitigation, offsetting and environmental compensation of adverse cultural and other effects on mana whenua/tangata whenua and the wider environment.

Ngāti Whātua Ōrākei (#45)

274. Ngāti Whātua Ōrākei are opposed to PC42 and seek that the plan change be declined in its entirety. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Their submission acknowledges that the proposed precinct site is not within the rohe of Ngāti Whātua Ōrākei. However, the bulk of the waste to be deposited in the proposed landfill facility will come from the Auckland urban area, where Ngāti Whātua Ōrākei hold ahi kaa and mana whenua. Ngāti Whātua Ōrākei state that the imposition of waste from their rohe on another iwi is culturally offensive – it degrades the mana of both Ngāti Whātua Ōrākei and the recipient iwi.
- Ngāti Whātua Ōrākei are essentially submitting on PC42 to support related hapū who are the ahi kā at Dome Valley; namely Ngāti Rango and Te Uri O Hau. Ngāti Whātua Ōrākei also recognises the mana whenua interests of Ngāti Manuhiri. Ngāti Whātua Ōrākei does not claim mana whenua interests at Dome Valley and is submitting in opposition as an expression of its whanaungatanga to those hapū and iwi who hold the mana at that place.
- Ngāti Whātua Ōrākei also notes that Te Rūnanga o Ngāti Whātua is assisting those hapū with the submission process and Ngāti Whātua Ōrākei fully supports the position of Te Rūnanga in this matter.
- Ngāti Whātua Ōrākei state that the private plan change request from WMNZ tramples upon the tikanga of their Atua Māori and Tokanga Māori. They state that iwi lands and waterways are become the toilet bowl of Auckland and this has to stop.
- Ngāti Whātua Ōrākei state that the area is important to them as Iwi. Their whakapapa is woven into the whenua and the waters that flow from the several tributaries and puna to the Hōteio and Kaipara Moana. They say that the Kaipara Moana is the traditional food basket of Ngāti Whātua and now faces its greatest environmental challenge with the landfill proposal – millions of tonnes of Auckland’s waste that will end up polluting their harbour.
- It is the position of Ngāti Whātua that the landfill proposal in its current form will cause irreversible damage to Papatūānuku and pose significant ongoing risks to the sustainability and mauri of the Hōteio River, Kaipara Moana, the whenua and the broader environment.
- Ngāti Whātua Ōrākei state that the proposal results in more than minor, and significant actual and potential adverse effects on the environment. These are the same as those identified by Te Uri o Hau in the section above with the following variations and additions:
 - Adversely affects Ngāti Whātua while providing for the practical expression of kaitiakitanga including their tikanga of:
 - Hau (a strategy that relates to air quality and airwaves)
 - Hua (a strategy related to land-based activities)

- Tai (a strategy to improve marine-based activities).
 - Rāhui instituted by Te Rūnanga o Ngāti Whātua and their hapū and Marae in opposition to the proposal.
 - Adverse terrestrial, aquatic and estuarine biodiversity effects.
 - Impacts on freshwater, including Te Awa Hōteoro and its catchments, and risk of discharge of contaminants to Te Awa Hōteoro and Kaipara Moana affecting te mana o te wai.
- Ngāti Whātua Ōrākei state that PC42 fails to address the following matters (under section 32 of the RMA):
 - (a) Alternative methods and sites that result in more appropriate and sustainable long-term outcomes for the region.
 - (b) Relevant benefits and costs.
 - (c) Uncertainties and risks.
 - (d) Alternative locations, reduced intensity and scale.
 - (e) Other reasonably practicable options for achieving the objectives.
 - (f) A summary of consultation with tangata whenua, advice received and response to that advice.
- In terms of alternatives, Ngāti Whātua Ōrākei argue that a landfill of this scale acts as a long-term disincentive to achieving the required shift to sustainable waste management practice. The landfill capacity sought in the proposal is out of proportion to any reasonably predictable need in the long term, even if a “predict and provide” philosophy was considered appropriate.
- Ngāti Whātua Ōrākei seek that the long-term environmental outcomes be considered. They state that the first step for protecting the future of the Kaipara Moana is to consider sustainable waste solutions.
- Ngāti Whātua Ōrākei therefore seek that Auckland Council halt all discussions with WMNZ and as a Treaty partner provide Ngāti Whātua Ōrākei the opportunity to co-create a partnership that will assist communities to manage waste in a way that puts Papatūānuku and our community at the centre of decision making.
- In terms of alternative sites, Ngāti Whātua Ōrākei point out the information available regarding WMNZ’s site selection is scant and that it is apparent that achieving a large landfill capacity ranked highly in the assessment (above the geotechnical and environmental constraints). The unavailability of much of the site selection information is simply unacceptable to Ngāti Whātua Ōrākei, given the acknowledged scale and significant adverse effect of the proposal. They consider that the process of considering alternative sites must be transparent.
- In terms of uncertainties and risks, Ngāti Whātua Ōrākei note that there are a number of these associated with establishment of the landfill in this location which have not been adequately addressed. They highlight that much faith is placed on site engineering to achieve groundwater protection over a very long timeframe (in practice well beyond that modelled). They consider that the risk of failure over the long term is not adequately addressed.
- As noted above, Ngāti Whātua Ōrākei seek that PC42 be declined in its entirety. However, in the event it is not declined, they request that substantial amendments to the proposed Auckland Regional Landfill provisions be made, based on the points raised in their submission. The changes would need to include avoiding adverse effects on:

- the whenua and awa of the Kaipara Harbour
- the exercise of kaitiakitanga by mana whenua iwi, hapū and whānau
- future generations
- the exercise of rāhui by mana whenua iwi, hapū and whānau
- terrestrial, aquatic and estuarine environments
- climatic destruction
- natural character and landscape
- communities in close proximity to the landfill, in relation to traffic, amenity, odour and noise.

Te Rūnanga o Ngāti Whātua (#132)

275. Te Rūnanga o Ngāti Whātua are opposed to PC42 and seek that the plan change be declined in its entirety. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Te Rūnanga o Ngāti Whātua represents approximately 15,000 beneficiaries throughout Auckland and Northland. It represents individuals, whānau and hapū within the iwi of Ngāti Whātua, who descend from the tūpuna, Haumoewarangī and other recognised tūpuna. The Rūnanga has been in existence for 32 years, and operates through a Māori Trust Board, accountable to the Ngāti Whātua people.
- Te Rūnanga o Ngāti Whātua have mana whenua in relation to the area associated with the landfill proposal, and sites directly associated with the impact of the discharges. They believe they have an obligation to contribute to the resource [management] process, in its kaitiaki role, mandated by its kawa, charter and enabling legislation. Te Rūnanga is the sole representative body authorised to address issues affecting Ngāti Whātua.
- Te Rūnanga o Ngāti Whātua states that WMNZ and the Auckland Council have failed in their duty to consult with Te Rūnanga o Ngāti Whātua. This oversight contrary to the requirements of the RMA, the Ngāti Whātua o Kaipara Claims Settlement Act (2013), and clear agreements with Auckland Council to ensure the rights and interests of Ngāti Whātua are provided for. In addition, the actions of WMNZ and Auckland Council have exacerbated the grievances genuinely held by Ngāti Whātua people, in relation to their whenua, awa and culture. Te Rūnanga o Ngāti Whātua reiterates that there is a very clear expectation in the Settlement Act for Ngāti Whātua that iwi, hapū and whānau would not be subject to further injustice.
- Te Rūnanga o Ngāti Whātua state that the landfill proposal is focused on meeting Auckland Council's current waste requirements, without having regard to Mana Whenua and the special relationship to the Whenua and the local community.
- Te Rūnanga o Ngāti Whātua considers that the proposal will result in more than minor and significant actual and potential adverse effects on the environment. These are the same as those identified by Ngāti Whātua Ōrākei in paragraph - of this report.
- Te Rūnanga o Ngāti Whātua also state that PC42 fails to address the matters regarding alternatives and risks already outlined by Ngāti Whātua Ōrākei and set out in paragraphs - to - of this report.

- As noted above, Te Rūnanga o Ngāti Whātua seek that PC42 be declined in its entirety. However, in the event it is not declined, they request that substantial amendments to the proposed Auckland Regional Landfill provisions be made, based on the points raised in their submission. The changes would need to include avoiding adverse effects on:
 - the whenua and awa of the Kaipara Harbour
 - the exercise of kaitiakitanga by mana whenua iwi, hapū and whānau
 - future generations
 - the exercise of rāhui by mana whenua iwi, hapū and whānau
 - terrestrial, aquatic and estuarine environments
 - climatic destruction
 - natural character and landscape
 - communities in close proximity to the landfill, in relation to traffic, amenity, odour and noise.
- The submission from Te Rūnanga o Ngāti Whātua also included a petition that was presented to Deputy Mayor, Bill Cashmore, Auckland Council as part of the Hiko that took place in Auckland on 17 July 2020. The petition includes 4,208 names of people who oppose a landfill in the Dome Valley⁶⁹.

Te Ohu Kaimoana (#143)

276. Te Ohu Kaimoana are opposed to PC42 and seek that the plan change be declined in its entirety. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Te Ohu Kaimoana is a representative organisation that has its origins in the 1992 Fisheries Deed of Settlement and was established through the passage of the Māori Fisheries Act 2004. Their role is to protect and enhance Iwi and Māori interests in the marine environment, particularly in relation to customary and commercial fisheries as well as aquaculture.
- Due to a range of circumstances, Te Ohu Kaimoana were unable to provide a comprehensive submission on PC42. However, they state that they support the submission put forward by Te Rūnanga o Ngāti Whātua and particularly concur with the issues it raises about the proposed plan change including that it:
 - Fails to comply with the RMA and the Ngāti Whātua o Kaipara Claims Settlement Act (2013).
 - Would result in significant and potential adverse impacts on the environment.
 - Fails to address cultural impacts, given there has been a lack of meaningful consultation and engagement with Ngāti Whātua.
- Te Ohu Kaimoana are concerned about the negative environmental consequences of PC42. If approved, the proposed plan change would increase the risk of the discharge of contaminants into Te Awa Hōteoro and Kaipara Moana.
- Kaipara Moana houses an important snapper nursery, numerous fish stocks and is the food basket of Ngāti Whātua. If PC42 is approved, the impacts it could have on the moana could degrade Ngāti Whātua's commercial and non-commercial customary rights secured under the Fisheries Deed of Settlement. Te Ohu Kaimoana state that this is unacceptable.

⁶⁹ Note that prior to lodgement the landfill proposal was initially referred to as being in the Dome Valley. However, PC42 refers to the precinct being in the Wayby Valley.

- For clarification, Te Ohu Kaimoana note that they do not intend for their submission to derogate from or override any response or feedback provided independently by Iwi.

Ngāti Manuhiri Settlement Trust (#138)

277. Ngāti Manuhiri are opposed to PC42 and seek that the plan change be declined in its entirety. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Ngāti Manuhiri consider that the proposed location is a poor choice for a large-scale regional landfill and there will be significant cultural impacts. This area has very significant cultural importance for Ngāti Manuhiri. The source of the water within Ngāti Manuhiri's rohe starts with the ancestral maunga which are located in this area:
 - Tamahunga
 - Tohitohi o Reipae
 - Kikitangiao
 - Pae Kauri
 - Pukenui
- Ngāti Manuhiri note that water within the rohe flows east to west and west to east from these ancestral maunga and puna. According to Ngāti Manuhiri tikanga they are all one interconnected system. The Hōteao catchment which is in the centre of the rohe is the largest catchment of Wai Mauri that resources the Kaipara Harbour. Hōteao awa is a large water system which is highly significant to the cultural history of Ngāti Manuhiri.
- Ngāti Manuhiri state that the proposed landfill will significantly impact on the Kaipara Harbour where Ngāti Manuhiri, alongside other iwi, have customary rights. The landfill will permanently change and diminish the mauri of this locality with waste being permanently stored in the ground and it will impact on the health of the whenua and surrounding environs.
- Ngāti Manuhiri are concerned around the permanent loss of streams and stream habitat in their rohe. They consider that a landfill will disturb the sacredness of the site for Ngāti Manuhiri and it will have significant adverse impacts on taonga species and habitats including Hochstetter Frogs, native fish, and birds.
- Ngāti Manuhiri note some other specific environmental concerns with the landfill proposal including:
 - The integrity of the landfill liner (failure to contain leachates and other contaminants will result in unacceptable cultural and environmental impacts on Ngāti Manuhiri's Wai Mauri)
 - Erosion and sediment impacts
 - Terrestrial and freshwater ecology
 - Traffic impacts
 - Closing of unformed roads
- Ngāti Manuhiri also state that WMNZ failed to engage appropriately with them prior to lodging the Plan Change application, with only one week given to read over 2,000 pages of evidence. They say that this was inadequate pre-lodgment engagement with them, as the mandated entity to represent Ngāti Manuhiri as mana whenua for this area.

- Ngāti Manuhiri also raise concerns that Valley 2 has also been flagged for a second landfill, alternative sites for a landfill are not shown, and there should be better alternative waste management methods (waste minimisation, reuse, recycling and different treatment methods).
- Ngāti Manuhiri state that placing large quantities of waste in locations such as Wayby Valley is not sustainable and does not respect the cultural aspirations of Ngāti Manuhiri the mana whenua.

Ngā Māunga Whakahii o Kaipara Development Trust (#149)

278. Ngā Māunga Whakahii o Kaipara Development Trust ('**NMWOKDT**') are opposed to PC42 and seek that the plan change be declined in its entirety. In general, NMWOKDT oppose PC42 due to the impact it would have on the environment – with the effects not being limited to within the proposed precinct, but causing risk on a wider scale to Hōteō and ultimately Kaipara Moana. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- NMWOKDT is the post settlement governance entity enabled by the Ngāti Whātua o Kaipara Claims Settlement Act (2013). It manages the assets and facilitates the interests of Ngāti Whātua o Kaipara. NMWOKDT has the mandate to speak collectively for Ngāti Whātua o Kaipara while not precluding the individual Whānau, Marae or Hapū right to speak for themselves.
 - Reweti (Whiti te Ra) to the South
 - Haranui (Otakanini) to the North West
 - Kakanui (Te Kia Ora)
 - Araparera (Te Aroha Pa) to the East
 - Puatahi (Te Manawanui) to the North
- NMWOKDT raise concerns around the purchase of the proposed precinct site by WMNZ that was approved by the Overseas Investment Office. This is because this sale was carried out in isolation of the Crown's Treaty partner from within the area most affected – primarily Ngāti Whātua with its 35 marae and 19 hapū spanning the breadth of Auckland and up to Whangarei. This is a significant failing leaving Ngāti Whātua nui tonu in a marginalised position within its own tribal area.
- NMWOKDT also express their disappointment that WMNZ notified both the applications for resource consent and private plan change request during the Covid-19 lockdown period.
- NMWOKDT are disappointed that WMNZ's application material is selective in nature with regards to mana whenua when it states "...Recognition and support from government, local authorities, organisations, corporations and community that Ngāti Manuhiri are Mana Whenua with customary title/rights to the waterways."⁷⁰ NMWOKDT draw attention back to the Ngāti Whātua o Kaipara Claims Settlement Act 2013 (Settlement Act). Equally, NMWOKDT consider WMNZ was lax to state there are no sites of significance without having engaged with Ngāti Whātua, but merely referring to a publicly available database.
- NMWOKDT state that the significance of the Hōteō, as with the Kaipara Moana, is intrinsic in the cultural concerns of Ngāti Whātua hapū, marae. To this end,

⁷⁰ Private Plan Change 42, Page 105, Section 9.

NMWOKDT consider it highly inappropriate that the Hōteō and the various Kaipara Harbour tributaries that are rich in resources are only described only as 'receivers' in the PC42 request documentation. Hōteō Awa runs through NMWOKDT's tribal area and is identified in the Unitary Plan as a Significant Ecological Area, an Outstanding Natural Feature, and a Natural Stream Management Area (in parts).

- NMWOKDT explain that Te Ao Māori calls for the protection and preservation of all that is culturally significant, to protect and preserve taonga resources using not only Mātauranga Māori but also western sciences. There is a reciprocal legacy owed to all generations and this lies in the balance.
- The environment and ecosystems are imbued with mauri, the intangible and lifegiving force that connects all things. Any shift to the mauri of the whenua, the Hōteō, and ultimately Kaipara Moana means a shift to us all.
- NMWOKDT's most sacred taonga is the Kaipara Moana and its catchment, which includes the Hōteō Awa. The Kaipara Moana shapes and grounds Ngāti Whātua o Kaipara's hapū, tikanga, and values.
- In light of this, NMWOKDT consider the RMA to be a restrictive framework that separates the environmental effects from cultural implications for papatūānuku, awa and moana. NMWOKDT consider that these cannot be seen in isolation.
- NMWOKDT state there is no longer any level of acceptance for increased loss and the destruction of the life sustaining mauri life force in Kaipara Moana catchments. The haukāinga hapū, and marae communities that surround Kaipara Moana will be affected by degradation to the Kaipara Moana.
- NMWOKDT considers that the lack of recognition of the likely impacts of leachate in extreme weather events resulting from climate change shows incomplete information. The private plan change request does not give due regard to the existing unique rainfall in the Dome Valley and the potential of more intense storm effects in the future due to changing weather patterns. The potential for damaging leachate to escape the site and into surrounding waterways is not guaranteed (it has not been eliminated as a risk). NMWOKDT cannot knowingly risk a repeat of the Fox River landfill breach⁷¹ occurring on the Hōteō Awa and the Kaipara Moana.
- NMWOKDT state that the proposal will result in more than minor, and significant actual and potential adverse effects on the environment. These are the same as those identified by Ngāti Whātua Ōrākei (listed in paragraph - of this report).
- In terms of traffic, NMWOKDT question whether the assumption that traffic from the south to access a potential landfill would dominate. This is because there is potential for waste operators in the Mangawhai area to travel to Wayby Valley site. NMWOKDT also note that there is potential for significant growth in the communities north of the proposed precinct.
- NMWOKDT set out the PC42 would put at risk a huge amount of time, money, and effort invested to restore the Hōteō and Kaipara Moana. This includes from Auckland Council, other councils, businesses, organisations, communities,

⁷¹ Westland District Council. (2019). *Fox landfill clean-up*. <https://www.westlanddc.govt.nz/fox-landfill-clean>

hapū, and iwi over the past fifteen years (to repair the damage done over the past 150 years).

- NMWOKDT seek that alternative waste management methods and sites be investigated that result in more appropriate long-term outcomes for the region. They consider that a landfill facility would negate any shift, short or long-term, to alternative technologies. Continuing on with landfills to dispose of waste is also contrary to the directions in the Waste Minimisation Act (2008) and the Auckland Climate Plan.
- In addition to the points of objection made above, the impact on the mana of Ngāti Whātua o Kaipara as being part of the wider Ngāti Whātua uri from PC42 is significant and inter-generational.

Pautahi Marae (#361)

279. Pautahi Marae are opposed to PC42 and seek that the plan change be declined in its entirety. Their pro-forma submission cites the reasons for opposing PC42 are that it conflicts with:

- Sound resource management principles
- The purpose and principles of the RMA
- The Auckland Unitary Plan
- National Policy Statements on Freshwater Management
- The Waste Minimisation Act (2008)
- The Auckland Council Waste Management and Minimisation Plan (2018)

280. They also object to one off bespoke objectives, policies and rules being applied to the site.

281. The submission refers to attached information, but no further information is attached

Tinopai Resource Management Unit (#398)

282. The Tinopai Resource Management Unit are opposed to PC42 and seek that the plan change be declined in its entirety. The submission raises the same matters as is covered by the submission of Te Uri o Hau above in this report. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Should PC42 be approved, the Tinopai Resource Management Unit state that substantial amendments are required to the provisions and these should address cultural mitigation, offsetting and environmental compensation of adverse cultural and other effects on Te Rūnanga o Ngāti Whātua, Te Uri o Hau and the wider environment.
- The submission also includes a CVA from Te Uri o Hau, a hapū of Ngāti Whātua. The CVA explains that the Kaipara Moana is the landing place of Te Uri o Hau's ancestral waka and it is now the superhighway of the people who live around its shores. The Kaipara connects people and enables them to support each other. The Kaipara is an extension of Māori who are intimately tied to their taonga through their whakapapa.
- The Kaipara has sustained Te Uri o Hau for generations. In pre-colonial times the ecosystems, swamps and wetlands were a major source of food, fresh water, bird life and industry. The introduction of farming and poor land management practices has resulted in the removal of 90% of the wetlands, swamps and

ecosystems. Since the introduction of pakeha, practices the Kaipara has deteriorated to the brink of extinction. It is no longer the food basket of plenty. Te Uri o Hau's lands have been cleared of forests and replaced with fields of grass.

- After generations of environmental decline, Te Uri o Hau is now faced with a proposed landfill that encroaches upon the Hōteio River and its tributaries. The CVA states that a landfill will have a major adverse effect on the Kaipara Moana, and in particular the mauri ora of the Kaipara.
- The CVA explains that burying paru (rubbish) in Papatūānuku (Earthmother) desecrates the tapu of their Earthmother. As kaitiaki, they have a responsibility to care for the Earth mother, who in turn nurtures, protects and provides all the sustenance required for te hunga ora (the living). Te Uri o Hau cannot stand by and let their moana be desecrated by the poisons that will flow out of Papatūānuku (from the landfill) and into the Hōteio river.
- Te Uri o Hau consider that the proposed PC42 site is unsuitable for a landfill as it is in a valley rife with waterways. The property is known as 'Spring Hill' and it has the highest rainfall in Auckland. There are tomos and the ground is generally unstable. All waterways on the site lead into the Hōteio River and then to the Kaipara Harbour. Dumping Auckland's rubbish for the next 100 years into a landfill in the precinct will decimate the mauri ora and beauty of Dome Valley. Desecration of these special areas and contamination of Kaipara is inevitable.
- The CVA expresses Te Uri o Hau's concerns about a landfill failing and spilling out waste and contaminants. It notes that the clean-up from the Fox Glacier landfill breach is still ongoing. The Fox Glacier is 13km long whereas the Kaipara Harbour is 947km². A similar clean-up exercise on the Kaipara would be impossible.
- Kaitiakitanga is a customary Māori practise which means guardianship, protecting, and nurturing. In Māori cultural terms, all natural and physical elements of the world are related to each other, and each is controlled and directed by the numerous spiritual assistants of the gods.
- Māoridom is very careful to ensure that the mana of kaitiaki is preserved. In the concept of Kaitiakitanga, Māori become the minders for their relations - that is, the other physical elements of the world. As minders, kaitiaki must ensure that the mauri or life force of their taonga is healthy and strong to uphold their mana. Each whānau or hapū is kaitiaki for the area over which they hold mana whenua – that is, their ancestral lands and seas. Should they fail to carry out their kaitiakitanga duties adequately, not only will their mana be removed, but harm will come to the members of the whānau or hapū.
- As kaitiaki of the Kaipara, Te Uri o Hau have a responsibility to place an aukati rāhui over the whenua to prevent the landfill beside the Hōteio river. Rāhui is a customary practise that embraces the traditions of kaitiakitanga, to protect the mauri for future generations. The Rāhui was placed on 15 June 2019. Rāhui and/or Waahi Tapu are the backbone of Māori culture and society. To ignore a Rāhui is to ignore Māori and their culture, values, mana, rights, and partnership under the Treaty of Waitangi.
- As their calls to stop the landfill have not been heard, the mana of the people of Te Uri o Hau has been trampled on by local authorities and government. The CVA states that working with local authorities who ignore calls for help in saving

the Kaipara is dehumanising and humiliating. The realisation that Te Uri o Hau's mana is not being heard is an assault on their mana and culture.

- The CVA also raises a number of issues around the PC42 process and its integrity. The CVA states that Auckland Council does not have jurisdiction over the entire Kaipara Harbour and therefore it cannot approve a landfill that will have impacts on areas outside its jurisdiction. Te Uri o Hau express disappointment that the Northern Regional Council failed to make a submission on the landfill.
- It is stated in the CVA that Auckland Council has a conflict of interest in processing PC42 as the landfill is an integral part of the Auckland Council's infrastructure (as stated by WMNZ). The CVA states that the council seemingly cannot live without the landfill and therefore would conveniently overlook or hide anything that might prevent the landfill going ahead.
- The CVA also expresses frustration at the notification period for PC42. Auckland Council notified the public during the COVID-19 lockdown period. The CVA states that the notification process was manipulated to put Māori on the back foot from the outset. It notes that Marae and kaitiaki did not have enough time to digest the material and did not have the benefit of hui with marae and mana whenua to discuss the proposal.
- The CVA raises opposition to the fact that WMNZ is owned by Beijing Capital Group Co Limited. As kaitiaki, they consider China is offensive in its litany of human rights violations. The CVA states that should Auckland Council allow this application to proceed, ignoring the calls from Māori and the Wellsford and Warkworth communities to decline the application, then New Zealand is essentially an annexe of China.
- The CVA is clear that Te Uri o Hau oppose PC42 and want it declined. However, as a back up the CVA proposes that if the landfill does go ahead then an iwi rohe group should be formed that has authority over the landfill site and surrounding areas. Te Uri o Hau acknowledge that this would be complicated due to 12 interested parties but suggest a shares system to have fair representation (i.e. Ngāti Manuhiri would have class A shares with full voting rights and participation due its mana whenua claim; lesser share classification would have partial voting rights).
- The CVA states that all environmental monitoring and reporting for a landfill (if granted) should be given to an independent party who has a vested interest in the mauri of the land. Te Uri o Hau would like to replace Auckland Council environmental monitors with kaitiaki, under the jurisdiction of marae and supported by iwi, Auckland Council and WMNZ (technically and financially). The kaitiaki would have the power to stop landfill activities should any breaches threaten the surrounding waterways, whenua and/or mauri ora. This participation by iwi would be limited to their rights as kaitiaki to protect, enhance, maintain, and handover their natural resources (taonga)
- Overall, the CVA concludes by reiterating that the message from the Treaty Partners, mana whenua, iwi, Ngāti Whātua, Te Uri o Hau, and the community is that the site is unsuitable for a 'mega landfill'.

Ngāti Rango (#412)

283. Ngāti Rango are opposed to PC42. They have submitted a statement of evidence as gesture of goodwill acknowledging a relationship between Ngāti Rango and WMNZ dating back two decades. Their submission outlines the cultural effects of PC42. Their consideration of the cultural effects is summarised as follows:

- Twenty years ago, WMNZ lodged a similar application to construct and operate a landfill within an old abandoned limestone quarry located at the upper reaches of the Waitematā Harbour catchment (Redvale) and on that occasion Ngāti Rango did not oppose WMNZ's application.
- In 2020 the confidence of Ngāti Rango has waned. The strength and integrity of any relationships are the corner-stone indicators of meaningful value. Ngāti Rango and WMNZ formed a relationship two decades ago. Upon close scrutiny Ngāti Rango note that the 20 year-span shows an 18-year void in the relationship. This will have implications for the quality of any future relationship between Ngāti Rango and WMNZ.
- Ngāti Rango acknowledges the tenure of WMNZ personnel with a pledge to continue to respect and enhance those relationships. What Ngāti Rango cannot anticipate or guaranteed is ownership. In two decades, ownership of WMNZ has changed three times. With those changes came policies of uncertainty – a concern for Ngāti Rango people with a further century of landfill aftercare.
- While Ngāti Rango did not oppose WMNZ's Redvale landfill application two decades ago, today they do oppose. Dairy Flat is a reasonably flat parcel of land with a moderate rain fall, whereas the Dome Valley is the complete opposite – steep country with a high rainfall which for Ngāti Rango means there's no certainty as to what will happen.
- The Ngāti Rango relationship is defined by tātai. Descent lines date back to the arrival of their ancestral waka Māhuhu. This landed on the shores of the inner Kaipara Moana adjacent to the mouth of the Hōteu. The Hōteu is the river and catchment that the proposed landfill drains into and the Kaipara is the recipient of all that flows from it and the spiritual home of the present day Ngāti Whātua.
- Hohepa Kereopa in his book Tohunga, written by Paul Moon explains:

“When one considers kaitiaki, you have to consider for what purpose it is being used. If you have a pipi bed, for example, you cannot talk about kaitiaki until you know all the concepts and life of the pipi” [and it must be for the pipi's wellbeing and not yours].
- Hohepa Kereopa saying that all life was imbued with mauri, wairua and mana and you were inextricably connected to that life force and when you nurtured and protected it as a kaitiaki. It reciprocated by extending your knowledge and learnings. Symbiotic relationships epitomise the ethics of kaitiakitanga in its unadulterated form and today man ignorantly overlooks these Mātauranga Māori teachings.
- Ngāti Rango note that if one was to have regard for Kaitiakitanga as conveyed by Hohepa, then the kaitiaki assigned to the WMNZ landfill proposal would have to be accorded the opportunity to learn everything there is to learn about the Dome Valley landfill.

- Through a Māori lens the proposed landfill area within the Hōteio catchment has been raped and pillaged and that continues with ongoing farming and forestry production. As a consequence, the Hōteio and Kaipara continues to suffer, as do the Tangata Whenua.
- The relationship of Ngāti Rango with their culture and tradition is diminishing at an accelerating rate. This is linked to Ngāti Rango being alienated from their lands, waters, wāhi tapu, and other taonga. Add in the continued erosion and suppression of their culture and traditions. Ngāti Rango are now against the rock with the hard place pressing against them and they're pushing back. It's not just this application to be considered but all the other cumulative effects that have arisen over two decades.
- Ngāti Rango would like to see what mitigation would accompany the landfill application that might result in some "meaningful" restoration and enhancement. As yet, they have not heard from WMNZ about this. However, Ngāti Rango have discussed amongst themselves a number of ideas for cultural and environmental effects mitigation including:
 - Replacing pines with natives (the one for one forestry restoration)
 - Establishment of a tuna, eel hatchery
 - The establishment of a native nursery in the general area pre-construction.
- Ngāti Rango do note that consultation and engagement with WMNZ has been ongoing and exemplary with an open-door policy that Ngāti Rango has really appreciated. It has ticked all the boxes from a cultural perspective.
- Landfills will be tapu for centuries. Today they are classified as contaminated sites never to be used again. Ngāti Rango currently have three contaminated coastal landfills, three or more decommissioned contaminated municipal landfills and one operational at Redvale.
- These are hakihiaki - festering skin sores that man has inflicted on Papatūānuku, Mother Earth, Ngāti Rango declare that as kaitiaki this must end. The people of Auckland must look for other ways to deal with waste. Landfills are not the answer in the way that they are being proposed and used today.
- Ngāti Rango welcomes the debate around alternatives that prevents man from abusing Papatūānuku and that needs to happen before this application is considered by Auckland Council. Ngāti Rango would like to be part of the solution in a meaningful way wherein culture and tradition is recognised and provided.

Comment

284. The iwi groups have put forward their concerns through direct consultation with WMNZ and via submissions on PC42 which are summarised above. Some of the matters raised in the submissions from the iwi groups have been covered in various sections of this report including but not limited to, geotechnical matters (section 11.9), the notification issues around PC42 (section 8), potential effects on water (sections 11.2, 11.4, 11.5, 11.6, and 11.7), and alternative waste disposal methods (section 3.4.1).
285. It is not for me to evaluate the cultural beliefs of the iwi groups – that is for the iwi to assert and establish⁷² to the decision makers (the hearings commissioners). The purpose of this section is to acknowledge the cultural effects raised by the iwi groups.

⁷² *Maungaharuru-Tangitu Trust v Hastings District Council* [2018] NZEnvC 79

286. It is clear that in a Māori worldview paradigm, a potential landfill under PC42 could have effects on concepts such as mauri, Papatūānuku, kaitiakitanga, Rāhui, and mana that are real. Therefore, these effects need to be considered in the assessment of PC42.
287. It is useful at this point to recap at a high-level what PC42 seeks to do. PC42 seeks to add an Auckland Regional Landfill precinct to the Unitary Plan. The provisions in this precinct do not permit a landfill to be established. Rather, a new landfill is a discretionary activity in the precinct.
288. Section A1.7 of the Unitary Plan explains how the hierarchy of activity classes are applied. For a discretionary activity, section A1.7.4 states:

“Resource consent is required for a discretionary activity and may be granted **or refused for any relevant resource management reason**. An application for resource consent for a discretionary activity will be **fully assessed** in terms of the relevant provisions of the Plan, **including all relevant objectives and policies**, and the Resource Management Act 1991, including in particular Part 2. Activities are classed as discretionary where they are **not generally anticipated to occur** in a particular environment, location or zone **or where the character, intensity and scale of their environmental effects are so variable** that it is not possible to prescribe standards to control them in advance. A full assessment is required to determine whether the activity, subject to any conditions, would be appropriate in terms of the provisions of the Plan, the effects of the activity on the environment and the suitability of the proposed location.”

[Emphasis added]

289. As explained above, a discretionary activity can be refused and there is no limit to the council’s discretion on what matters it can consider (within resource management confines). A discretionary activity does not give a ‘green light’ to an activity. Therefore, while the proposed precinct sets up a potential pathway for a new landfill to seek consent, the precinct does not guarantee it will be granted.
290. The precinct indicates that the site has the potential to be developed for a landfill, but it is entirely plausible that a discretionary resource consent to establish a landfill under the precinct could be declined. It is only a discretionary activity resource consent that addresses all the matters in section 104 of the RMA that may be granted.
291. The proposed precinct also sets out that a resource consent for a new landfill must be publicly notified, enabling anyone to lodge a submission and become involved in the process.
292. From the above, it is clear that there is scope for cultural effects to be considered through any resource consent application for a landfill under the proposed precinct.
293. It is also important to note that Part 2 of the RMA requires a balancing act and while cultural effects are part of the mix, they do not automatically ‘veto’ a proposal⁷³. The provisions of Part 2 of the RMA dealing with Māori interests give no veto power over developments under the Act. Rather, these interests must be balanced against the

⁷³ *Verstraete v Far North District Council* [2013] NZEnvC 108 (paragraphs 87-90)

other matters listed in Part 2 and the over-riding purpose of the Act under Section 5 to promote the sustainable management of natural and physical resources⁷⁴.

294. I consider that the current objectives and policies of the precinct as proposed by WMNZ will address some of the concerns of iwi outlined in their submissions. These include Objective 6 and Policies 2 and 3 which recognise potential effects on cultural values, acknowledge the importance of the Hōteio River, ensure that an assessment of effects on mana whenua values is undertaken, and recognise the potential effects of discharges on cultural values.
295. However, in addition to this I recommend that further modifications to the provisions are required. The first change is to acknowledge the importance of the Kaipara Harbour to mana whenua in the precinct description. The second is to encourage a resource consent applicant using the precinct to explore ways to offset or compensate for cultural effects that cannot be avoided. The third amendment is to require ongoing consultation and involvement of iwi in the oversight of the establishment and operation of the potential landfill. My recommended amendments to the precinct provisions are shown below:

I617.1 Precinct Description

...

The land and the surrounding waterways, particularly the Hōteio River and the Kaipara Harbour, have significant value to mana whenua...

...

I617.3 Policies

2. Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied, or mitigated, offset, or compensated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan's Accidental Discovery Rule (E11.6.1).

...

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

- (1) Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following:

OPERATIONS

⁷⁴ *Te Rūnanga O Ngai Te Rangī Iwi Trust v Bay of Plenty Regional Council* [2011] NZEnvC 402 (paragraph 298)

...

INITIAL CONSTRUCTION

...

In preparing and implementing the Landfill Management Plan the applicant must consult an Iwi Liaison Group established for the Auckland Regional Landfill comprising mana whenua.

The Assessment of Environmental Effects provided with any application for resource consent shall include assessment of adverse effect on mana whenua cultural values, and how those effects may be avoided, remedies or mitigated.

296. Overall, and subject to further evidence from iwi groups at the hearing, I am of the view that the changes to the precinct recommended in this section (and others) will ensure that cultural effects are sufficiently addressed in any potential landfill development using the precinct.

11.2. Freshwater ecology

Application

297. Section 4.9 of the private plan change request provides an assessment of the effects on surface water systems, supported by a Water quality baseline Monitoring Report and an Assessment of aquatic and terrestrial ecological values and effects Report (Technical Reports F and G).
298. The applicant emphasises that the proposed precinct provisions do not replace the rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33, or for erosion and sediment control in Chapters E11 and E12. Any future applications for the activities regulated by these chapters would continue to be assessed under the existing rules and assessment criteria in the Unitary Plan.
299. In terms of potential effects on surface water systems from developing a landfill within the proposed precinct, the applicant accepts these include potential changes to stream habitat, water quality, and effects on freshwater fauna. However, the applicant states that stream reclamation is an almost inevitable consequence of developing a landfill in the Auckland Region, as any large valley system which may be suitable for development as a landfill will likely have streams present due to climatic conditions in Auckland. The applicant states that the proposed precinct includes measures to protect Natural Stream Management Areas.
300. The applicant highlights that the proposed precinct provisions require that adverse effects be avoided, remedied or mitigated and also provide for the use of offsetting or compensation to manage significant residual adverse effects associated with the reclamation of stream beds and associated loss of freshwater systems. However, the applicant states that in recognition of the objectives and policies in the Regional Policy Statement relating to the importance of infrastructure, the proposed policies do not require full compensation or offsetting.
301. The applicant concludes that the proposed precinct provisions will provide for an appropriate assessment through the resource consent process, with policies requiring effects to be avoided, remedied or mitigated, or when significant effects are unavoidable, offset or compensated.

Peer review

302. The applicant's surface water assessment (with regards to freshwater ecology) has been reviewed for the council by Mark Lowe, a Freshwater Ecologist from Morphem Environmental Limited. A memo from Mr Lowe is included in **Attachment 5** of this report.
303. Mr Lowe considers that the specialist reports from the applicant that describe the freshwater environments within the proposed plan change boundaries are accurate. However, in terms of the proposed precinct provisions and their potential to enable effects on freshwater ecology, Mr Lowe has several significant concerns.
304. Firstly, Mr Lowe considers that the initial site selection process was limited in its consideration of ecological constraints. Only following the selection of the site, did the applicant undertake ecological field surveys that identified several 'at risk' species including longfin eel, inanga, kakahi and Hochstetter's frogs, as well as, the Very High ecological values as outlined in the applicant's Assessment of aquatic and terrestrial ecological values and effects Report.
305. Mr Lowe considers that other sites are likely to be more appropriate for a potential landfill (in terms of freshwater ecology). However, he does accept that the adverse freshwater ecology effects of a landfill activity could be managed through a robust application of the effects management hierarchy, preferably achieving a net gain of ecological value outcome.
306. Secondly, Mr Lowe considers that the applicant's proposal to classify stream and wetland reclamation as a discretionary activity is inappropriate and unnecessary. This activity is non-complying under the Auckland-wide provisions, but the applicant considers a less onerous activity status is suitable within the precinct due to the importance of providing infrastructure. However, Mr Lowe refers to the existing policy framework of the Unitary Plan that already adequately recognises municipal landfills as infrastructure and acknowledges a balance between providing for infrastructure and protecting freshwater environments⁷⁵. He considers that the non-complying activity status of the underlying Auckland-wide provisions (Chapter E3) are more suitable.
307. Furthermore, Mr Lowe points out that some of the activity statuses in the proposed precinct are no longer enabled in light of the new NES:FW. This relates to the references to wetlands in activities (A8) and (A9) in table I617.4.1 and parts of activity (A1) in table I617.4.2. The NES:FW states that earthworks and the taking, use damming, diversion, or discharge of water within a natural wetland are prohibited activities. Legally, the Unitary Plan cannot be more lenient than the standard.
308. In light of the existing policy framework balancing infrastructure and protecting freshwater environments as well as the new requirements of the National Environmental Standards for Freshwater 2020, Mr Lowe recommends that activities (A8) and (A9) in table I617.4.1 and activity (A1) in table I617.4.2 be deleted. This would mean that the precinct would be silent on the reclamation, drainage, diversion or disturbance of lakes, rivers, streams, and wetlands. When a precinct is silent on a matter, the underlying zone, Auckland-wide, and overlay provisions apply.
309. Should the hearings panel decide to retain the activity statuses in the proposed precinct, Mr Lowe recommends some minor changes to clarify these provisions for the plan reader.

⁷⁵ E.g. Introductory text to Chapter E3, Policy B7.3.2(4), Policies E3.3(7), (9) and (13).

310. Finally, Mr Lowe also raises concerns around objective I617.2 (4) and policies I617.3 (4), (5) and (6) of the proposed precinct. These set out a framework for managing adverse effects of activities associated with the potential development and operation of the Auckland Regional Landfill. The provisions state that any residual adverse effects will be offset or compensated (subject to the extent that is reasonably practicable, whether such offsets or compensation are offered by the applicant, and where it will promote the purpose of the RMA).
311. Mr Lowe considers these provisions in the precinct are unnecessary and have the potential to add confusion when processing resource consent under the precinct. He points to the RMA, the National Policy Statement on Freshwater Management (2020), the National Environmental Standards on Freshwater, and the Unitary Plan as already providing a framework for residual adverse effects that include consideration of offsetting and compensation.
312. Should the hearings panel decide to retain these provisions, Mr Lowe considers that further thought should be given to the particular wording in objective I617.2 (4) and policy I617.3 (6). Mr Lowe's concern is that these provisions undermine the principles of the 'effects management hierarchy' in higher order documents and pre-emptively create an inability to fully manage the significant adverse effects of an activity. Mr Lowe also cites specific concerns with the wording in policy I617.3 (6)(a) and (b)
313. In Mr Lowe's view, these matters are more appropriately assessed under the existing RMA, the National Policy Statement on Freshwater Management (2020), the National Environmental Standards on Freshwater, and the Unitary Plan policy framework which does not preclude nor pre-empt this outcome.

Comment

314. I agree with Mr Lowe's review of the applicant's surface water assessment (with regards to freshwater ecology). I acknowledge Mr Lowe's concerns around the site selection process and the timing of more detailed ecological assessments of the site. However, I note that a site selection process will inevitably involve trade-offs between different factors and finding a 'perfect' site within the Auckland Region is unrealistic. While it could be argued that there may potentially be 'better' sites for a potential landfill in Auckland, I consider that the applicant has met the requirements of s32 of the RMA in terms of assessing alternatives, as discussed in section 3.4.3 of this report
315. In my view, the site has a number of attributes that would make it potentially suitable for a landfill (see section 3.4.2 of this report). I also note that Mr Lowe accepts that the adverse freshwater ecology effects from a potential landfill on this site could be managed through a robust application of the effects management hierarchy.
316. I agree with Mr Lowe that there is already an existing policy framework balancing infrastructure and protecting freshwater environments. I do not consider that a proposed landfill specifically on this site is such an essential piece of infrastructure that it should override the existing policy framework. The framework is set up to specifically consider the tensions between the provision of infrastructure and environmental protection. I also agree with Mr Lowe that the wetland parts of some of the activities in the precinct activity tables are now *ultra vires*⁷⁶ in light of the National Environmental Standards for Freshwater 2020.

⁷⁶ Beyond the council's legal power.

317. I do not agree with the applicant's proposal that to reflect the importance the Regional Policy Statement places on infrastructure, full compensating or offsetting is not required in the proposed precinct provisions. I agree with Mr Lowe that the proposed precinct provisions that refer to the 'effects management hierarchy' are unnecessary and have the potential to add confusion. Again, I do not consider that a proposed landfill specifically on this site is so essential, and is infrastructure of such significance, that it should override the existing policy framework.
318. I agree with all of the recommended amendments to the precinct from Mr Lowe⁷⁷. I consider that with activity (A1) in table I617.4.2 being deleted there is no reason to retain Sub-precinct B (as its only purpose was to enable that rule). I therefore consider that all references to Sub-precinct B be deleted from the proposed precinct text and Sub-precinct B deleted from the planning maps.
319. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.1 Precinct Description

...

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

...

The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or on some matters offset/compensate adverse effects, including on ~~ecological/freshwater and mana~~ whenua values, that may be created by these activities to the extent practicable.

...

I617.2 Objectives [rp/dp]

...

4. ~~Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.~~

...

I617.3 Policies [rp/dp]

...

4. ~~Subject to policy 5, provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill.~~

⁷⁷ Mr Lowe's preferred amendments (not the secondary amendments Mr Lowe proposes should his preferred amendments not be accepted).

5. ~~Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.~~
6. ~~Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:~~
- a. ~~not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
 - b. ~~any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~

...

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
Activities in lakes, rivers, streams and wetlands		
(A8)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands outside overlays that are otherwise categorised as non-complying.	D
(A9)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands inside overlays unless a more lenient activity status applies	NC

...

Table I617.4.2 Activity Table – Sub-precinct B

Table I617.4.2 specifies the activity status of activities in, on, under, or over the bed of lakes, rivers, streams and wetlands within Sub-precinct B, pursuant to sections 13 and 14 of the Resource Management Act 1991. This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed.

Activity		Activity status
(A1)	Works within lakes, rivers, streams (including intermittent streams) and wetlands within Sub-precinct B, including reclamation, drainage, diversion or disturbance of any watercourses, or construction of structures unless a more lenient activity status applies.	D

11.3. Terrestrial ecology

Application

320. Section 4.8 of the private plan change request addresses terrestrial ecology with reference to an Assessment of Aquatic and Terrestrial: Ecological Values and Effects (Technical Report G). The report describes the wider site including the vegetation, ecosystems, fauna presence, watercourses, and wetlands. It also outlines the ecological factors and their associated values to provide an understanding of the terrestrial ecology values within the proposed precinct.
321. The applicant summarises the potential effects on terrestrial ecological values from developing a landfill within the proposed precinct as a loss of indigenous vegetation and important habitat and resources for fauna, and direct effects on fauna such as injury or death.
322. The applicant concludes that the proposed precinct provisions will provide for an appropriate assessment through the resource consent process, with policies requiring effects to be avoided, remedied or mitigated, or when significant effects are unavoidable, offset or compensated.
323. As for a number of specialist areas, there does not appear to have been a high-level consideration of the effects of the plan change on terrestrial ecology. Rather, the private plan change request relies on the ecological assessment for the related (but much more specific) resource consent for the landfill.

Peer review

324. The applicant's terrestrial ecology assessment has been reviewed for the council by Simon Chapman, a Principal Ecologist with Ecology New Zealand Limited. A memo from Mr Chapman is included in **Attachment 5** – Technical specialist memos of this report.
325. While Mr Chapman notes that a specific evaluation of PC42 and its potential effects on terrestrial ecology has not been undertaken, he acknowledges that much of the information informing the resource consent applications and the private plan change request would be the same.
326. Mr Chapman considers that the basis of PC42 essentially relies on the site being an appropriate location for landfill activity. However, he notes that the consideration of ecological values in selecting the preferred site was limited to the use of existing Unitary Plan overlays. Ecological surveys of the site were only undertaken once the selection of the Wayby Valley site had occurred. These surveys then identified additional high ecological values, wetlands, streams and several 'threatened' and 'at risk' species including the longfin eel, Īnanga, Hochstetter's frog, long-tailed bat, and spotless crane. From Mr Chapman's terrestrial ecology standpoint, he believes there are likely to be other sites that would be more appropriate for the proposed precinct (and potential landfill) than this site which could have been highlighted had the appropriate level of detailed surveys been undertaken prior to the site selection.
327. However, Mr Chapman accepts that the adverse terrestrial ecology effects of a landfill activity could be managed through a robust application of the effects management hierarchy. This would preferably achieve a net gain of ecological value.
328. In terms of specific provisions within the proposed precinct, Mr Chapman does not consider it necessary for the precinct objectives and policies to amend the RMA,

NPS:FW, and Unitary Plan framework for the consideration of offsetting and compensation⁷⁸. In his view, the RMA and Unitary Plan already sufficiently provide for this and therefore he recommends that Objective I617.2 (4) and Policies I617.3 (4), (5) and (6) be deleted from the precinct.

329. Mr Chapman notes that Objective 1617.2 (5) states that the ecological effects from works in SEAs will be avoided. However, in Mr Chapman's view any works that do occur in a SEA will have ecological effects. He considers that there is a conflict within this objective and it therefore provides uncertainty in its interpretation. Mr Chapman recommends the objective be amended to state that effects on SEAs are avoided where practicable or are otherwise minimised or the objective deleted.
330. Mr Chapman identifies that the precinct provisions that relate to indigenous fauna/flora will come under the requirements for the wetlands and streams at the site – notably activities (A8) and (A9) in Activity table I617.4.1. He has concerns with the proposed precinct's discretionary activity for reclamation of streams outside overlays (that would otherwise be non-complying) and the reclamation of natural wetlands (that would otherwise be prohibited by the NES:FW).
331. Further to this, Mr Chapman also notes that the new NES:FW states that earthworks and the taking, use damming, diversion, or discharge of water within a natural wetland are prohibited activities. Therefore, in addition to Mr Chapman's argument above, PC42 must give effect to the NES:FW and therefore activities (A8) and (A9) as they relate to wetland reclamation must legally be removed from the proposed precinct.
332. The apparent dilution of potential effects management for any activity that should be a restricted discretionary activity (within the Unitary Plan), for which the precinct has proposed to reduce to a discretionary activity status (Activity table I617.4.1 (A14)), has been proposed without clear reasoning as to why and where this would be required. In Mr Chapman's view, this could have considerable effects on the management and assessment of the effects from this on fauna – including mortality and habitat/resource loss.
333. Mr Chapman also considers that the activity status should not be relaxed to a discretionary activity to enable the establishment of infrastructure. He believes this to be unnecessary as the existing policy framework of the Unitary Plan adequately recognises municipal landfills as infrastructure.
334. Mr Chapman also notes that the new NES:FW states that earthworks and the taking, use damming, diversion, or discharge of water within a natural wetland are prohibited activities. Therefore, in addition to Mr Chapman's argument above, PC42 must give effect to the NES:FW and therefore activities (A8) and (A9) as they relate to wetland reclamation must legally be removed from the proposed precinct.

Comment

335. I agree with Mr Chapman's review of the applicant's terrestrial ecology assessment. The site does have a number of terrestrial ecology factors that mean it is not an ideal site for a landfill. However, in my view this needs to be balanced alongside the other factors related to the location of this landfill. It is also relevant that any residual effects on terrestrial ecology can potentially be offset or compensated. In my view, that means that the site cannot be ruled out from a terrestrial ecology perspective.

⁷⁸ Where significant residual adverse effects that cannot practically be avoided, remedied, or mitigated.

336. I agree with Mr Chapman that the objectives and policies within the precinct are unnecessary where they seek to add to the RMA, Unitary Plan, and NPS:FW framework for the consideration of offsetting and compensation of significant residual adverse effects. I also agree with Mr Chapman that Objective 5 has an internal conflict (works in an SEA cannot completely avoid adverse ecological effects) and I agree with his suggested amendment to the objective.
337. I support Mr Chapman's view that the existing policy framework of the Unitary Plan adequately recognises municipal landfills as infrastructure and the existing non-complying activity status attributed to stream reclamation is appropriate. I also note Mr Chapman's comments that the new NES:FW legally requires activities (A8) and (A9) as they relate to wetland reclamation to be removed from the proposed precinct. Further information on NES:FW is covered in section 10.3.1 of this report.
338. In light of this above I recommend that the proposed precinct be modified to address the terrestrial ecology concerns of Mr Chapman. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** – Recommended text changes to the Auckland Regional Landfill precinct where the full precinct provisions are shown with the recommended amendments.

1617.1 Precinct Description

...

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

The land and the surrounding waterways, particularly the Hōteu River, have significant value to mana whenua in terms of historical, spiritual and cultural associations. Areas within and adjacent to the Auckland Regional Landfill Precinct have significant ecological values (e.g. the Sunnybrook Reserve). The objectives and policies of the Precinct requires a full assessment of potential and actual effects (including cumulative and indirect effects) and the requirement to avoid, remedy, or mitigate these. Offset should only be undertaken where efforts to avoid, minimise and mitigate have been undertaken to the extent practicable and should adhere to best practise offsetting in New Zealand. Compensation should be used only as the last management option for residual effects not able to be addressed by the previous steps. Effects to be considered include ~~or offset/compensate adverse effects, including those~~ on ecological/freshwater and mana whenua values, that may be created by these activities, to the extent practicable.

...

1617.2 Objectives

...

4. ~~Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset,~~

or compensated where this will promote the purpose of the Resource Management Act 1991.

5. ~~Effects on the ecological and mana whenua values from w~~Works within any Significant Ecological Area overlay, ~~or~~ Wetland Management Area overlay, ~~or~~ Natural Stream Management Area overlay areas are avoided. Where works cannot be avoided as far as practicable, effects on the ecological and mana whenua values ~~mana whenua values from works within any Natural Stream Management Area overlay are avoided where practicable or are otherwise minimised. Effects to consider include but are not limited to those outlined in D9.2 (a-q).~~

...

I617.3 Policies [rp/dp]

...

4. ~~Subject to policy 5, provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill.~~
5. ~~Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.~~
6. ~~Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:

 - a. ~~not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
 - b. ~~any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~~~

...

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
Activities in lakes, rivers, streams and wetlands		
(A8)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands outside overlays that are otherwise categorised as non-complying.	D
(A9)	Reclamation, drainage, diversion or disturbance of any lakes, rivers,	NC

	streams (including intermittent streams) and wetlands inside overlays unless a more lenient activity status applies	
...
(A14)	Except for (A4), (A5) and (A9) above, any activity classified as a non-complying activity elsewhere in the Unitary Plan associated with any landfill activity	D

5

Table I617.4.2 Activity Table – Sub-precinct B

Table I617.4.2 specifies the activity status of activities in, on, under, or over the bed of lakes, rivers, streams and wetlands within Sub-precinct B, pursuant to sections 13 and 14 of the Resource Management Act 1991. This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed.

Activity		Activity status
(A1)	Works within lakes, rivers, streams (including intermittent streams) and wetlands within Sub-precinct B, including reclamation, drainage, diversion or disturbance of any watercourses, or construction of structures unless a more lenient activity status applies.	D

1617.6 Standards

1617.6(1) Restricted Discretionary Standards

5. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (except Sub-precinct B).

1617.6 Standards

1617.6(2) Discretionary Standards

4. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (except Sub-precinct B).

11.4. Groundwater and aquifers

Application

339. Section 4.6 of the private plan change request provides an assessment of the effects on groundwater, supported by a Hydrogeological Assessment and a Water Quality Baseline Monitoring Report (Technical Reports E and F).
340. The applicant's assessment of the groundwater and aquifer systems beneath the proposed precinct is that the regional (deeper) potable aquifer zone is well separated (hydraulically) from the upper aquifer (shallow groundwater) directly beneath Sub-Precinct A.
341. The applicant acknowledges that should leachate escape into the surrounding environment, it has the potential to migrate into and contaminate groundwater. However, this can largely be avoided by the design and construction of an appropriate landfill lining system and the precinct includes a standard that the lining system must meet. Policy 3 of the proposed precinct also requires the adoption of a best practice lining system and appropriate waste acceptance criteria.
342. The applicant states that the existing suite of objectives, policies and rules in the Unitary Plan that control effects on water quality can be relied on and there is no need to duplicate these or establish alternative controls within the proposed precinct.

Peer review

343. The applicant's groundwater assessment has been reviewed for the council by Aslan Perwick, the Groundwater Services Leader at Pattle Delamore Partners Limited. A memo from Mr Perwick is included in **Attachment 5** of this report.
344. Mr Perwick raises a number of concerns around the wording in the proposed precinct in relation to groundwater and aquifers. Firstly, Mr Perwick considers the groundwater in this area to be regionally significant. While Objective 4 in the proposed precinct mentions rivers, lakes, streams, and wetlands, it does not refer to groundwater resources. Given its importance, Mr Perwick recommends a new objective and policy be added around groundwater and aquifer water quality protection.
345. Secondly, Mr Perwick notes that any potential landfill and risks to water quality could outlast any operational landfill resource consents. He considers that some volume/mass/rate of leachate seepage or other release of contaminants to ground will occur over the entire life of the landfill – both through its operation and once it is closed and in aftercare. The release rate and total release amount to ground over the landfill's life (and aftercare) cannot be predicted with absolute certainty. However, in Mr Perwick's opinion it will unquestionably be greater than zero. Therefore, there will be physical locations whereby water quality (groundwater and/or surface water) is degraded.
346. Mr Perwick considers that the proposed precinct needs to better address this issue. Therefore, he recommends that a three-dimensional physical area (e.g. a boundary or 'envelope') be identified for the landfill within which water quality degradation must be contained over the entire life of any potential landfill. This area would need to be within the proposed precinct and all water quality degradation effects must be confined to within this area.
347. Mr Perwick considers that this would provide a measurable and understandable boundary of effects to safeguard all other receptors/receiving environments that could

be affected by water quality degradation. The identified extent of the 'envelope' would be built into future conditions of consent for monitoring.

348. Due to the long life and aftercare of a potential landfill, Mr Perwick would prefer that the standards relating to this three-dimensional area or 'envelope' be tied to 'best practice' for water quality performance standards, rather than 'hard-coded' to present day standards.
349. Thirdly, Mr Perwick considers that the matters of discretion (I617.8.1 and I617.8.2) need to include a further three matters:
- **Diversion of Water**
The existing E7 provisions do not adequately cover the hydrological balance of the immediate area of a landfill structure or the flow-on impacts to other parts of the hydrological system (e.g. reduction in aquifer recharge and reduction in stream baseflows).
 - **Adequacy of the Site Management Plan**
Full discretion should be retained by the council on all aspects of the Site Management Plan, rather than limited to just the topics outlined. There may be issues arise which are not strictly within the realms of the specified topics and the council's discretion on such issues should not be precluded.
 - **Adequacy of the Aftercare Plan**
Again, full discretion should be retained by the council on all aspects of the Aftercare Plan, rather than limited to just the topics outlined. There may be issues arise which are not strictly within the realms of the specified topics and the council's discretion on such issues should not be precluded.
350. Finally, Mr Perwick notes that the underlying Auckland-wide rules for a number of drilling activities (E7.4.1 A36, A37, A38, and A39) are permitted activities. He considers that drilling of this nature, particularly within Sub-Precinct A, has the potential risks of drilling through critical engineering elements which are designed to contain waste/leachate (e.g. landfill liner, sub-liner drainage, etc). Mr Perwick acknowledges that while this seems obvious for periods of operational landfilling, he notes that the aftercare period also requires such provisions. Overall, he recommends that drilling activities within Sub-precinct A are added to the proposed precinct activity table as controlled activities.

Comment

351. I agree with Mr Perwick's review of the ground water effects, in particular that the groundwater is very important in this area and therefore further provisions in the precinct are necessary to reinforce this.
352. I also acknowledge Mr Perwick's point that there will be leachate seepage or other release of contaminants into the groundwater over the life of the landfill. I agree that there will be physical locations whereby water quality (groundwater and/or surface water) is degraded and this must be limited to within the precinct. I consider the approach recommended by Mr Perwick to delineate the area in which all water quality degradation effects must be confined to is a good approach.
353. I support Mr Perwick's view that further matters of discretion should be added to the precinct around the diversion of water, the site management plan, and the aftercare plan.

354. I also agree that a controlled activity for drilling within Sub-precinct A is advisable. While I accept that the risk is very low that the landowner/landfill operator would intentionally drill into the landfill liner, the controlled activity is a method to ensure that any drilling is first checked by council and therefore also requires the landowner/landfill operator properly check the drilling before commencing. I note that the definition of “Bore” in *Chapter J – Definitions* of the Unitary Plan excludes piezometers that are constructed into the refuse in landfills.
355. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

...
I617.3 Policies

...
 X. Adverse effects arising from the interception/diversion of recharge to the Waitemata Regional aquifer and adverse effects on the quality and quantity of water in the Waitemata Regional aquifer arising from the development and continued operation of the Auckland Regional Landfill are avoided. Any area within the precinct where it is not practicable to achieve this must be identified through a three-dimensional physical area (e.g. a boundary or an ‘envelope’) within the precinct. Any water quality degradation must be contained within this area over the entire life of the landfill (including aftercare).

...
Table I617.4.1 Activity Table (rp/dp)

Activity	Activity status
<u>Drilling and Use of holes and bores in Sub-precinct A or within 500m of Sub-precinct A</u>	
<u>(AX)</u>	<u>Holes for:</u> <ul style="list-style-type: none"> • <u>geotechnical investigation;</u> • <u>mineral exploration;</u> • <u>mineral extraction;</u> • <u>geological investigation;</u> • <u>contaminated site investigation; or</u> • <u>down-hole seismometers</u>
<u>(AX)</u>	<u>Holes or bores for:</u> <ul style="list-style-type: none"> • <u>stormwater disposal</u> • <u>down-hole heat exchangers</u>
<u>(AX)</u>	<u>Bores for groundwater level or quality monitoring</u>
<u>(AX)</u>	<u>Restoration, alteration or replacement of lawfully established bores</u>

...
I617.6(1) Restricted Discretionary Standards

...
 X. A three-dimensional physical area (e.g. a boundary or an ‘envelope’) as required by Policy I617.3 (X3) and Special information requirement I617.9.1 (1) shall be identified and implemented.

...
I617.6(2) Discretionary Standards

...
 X. A three-dimensional physical area (e.g. a boundary or an ‘envelope’) as required by Policy I617.3 (X3) and Special information requirement I617.9.1 (1) shall be identified and implemented.

...
I617.7. Assessment – controlled activities

~~There are no controlled activities in this precinct.~~

I617.7.1 Matters of control

1. For Drilling and Use of holes and bores from all controlled activities (AX, AX, AX, and AX):
 - a. borehole location
 - b. borehole design
 - c. drilling/installation methodology

I617.7.2 Assessment criteria **Drilling and Use of holes and bores**

The council will consider the relevant assessment criteria below for controlled activities:

1. Whether the borehole location avoids drilling through the liner system whenever possible, or otherwise minimises contaminant release risks.
2. The extent to which the borehole design avoids drilling through the liner system whenever possible, or at least ensures the borehole design will not create potential pathways for contaminant escape (now or in future).
3. The extent to which the drilling/installation methodology avoids drilling through the liner system whenever possible, or at least ensures the drilling method will not create potential pathways for contaminant escape (now or in future).

...

I617.8.2 Assessment criteria

...

Discharges to land and water from legally established landfills

1. ...taking into consideration all of the following:
 - ...
 - (e) the adequacy of the site management plan including:
 - ...
 - IX. Any other aspect(s) pertinent to the sound management of the site and/or associated risks assessed in relation to relevant regional or national standards/guidance at the time of applying this criterion.
 - ...
 - 1(f) the adequacy of the site aftercare plan including:
 - ...
 - III. Any other aspect(s) pertinent to site aftercare and/or associated risks in relation to relevant regional or national standards/guidance at the time of applying this criterion.

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

- (X) Any application for a new landfill under rules I617.4.1(A1)-(A7) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS:

- Groundwater Monitoring and Contingency Plan
(To include the identification of a three-dimensional physical area (e.g. a boundary or an 'envelope') within the precinct and demonstrating that water quality degradation can be contained within the identified envelope. Degradation will be measured against water quality standards and/or guidelines that are in effect at the time for the protection of human health and environmental receptors. Standards and / or guidelines shall be selected in accordance with Ministry of Health and / or Ministry for the Environment guidance on the selection and application of guideline values in New Zealand e.g. ANZECC 2000, ANZG 2018, Drinking Water Standards for New Zealand (2005 revised 2018), etc. and updates/replacements/supersedes).

11.5. Sediment discharge from land disturbance

Application

356. The applicant has provided the same application material as that provided for the related resource consent application (BUN60339589) for a proposed landfill, applied for under the current provisions of the Unitary Plan. This material includes a Sediment and Erosion Control Assessment (Technical Report R). That report contains a proposed earthworks methodology including details such as Universal Soil Loss Equations and proposed erosion and sediment controls to address the potential effects from sediment discharges to the receiving environment. The applicant has also proposed to undertake an adaptive management approach. While this information demonstrates how potential sediment discharges from a landfill within the subject site would be managed, this level of detail is not considered necessary to assess the proposed plan change.
357. PC42 proposes a new precinct with a complete set of provisions that would supersede and in some cases be read in conjunction with the current provisions of Chapter E11 (Land disturbance – Regional) of the Unitary Plan. The activity table for the proposed precinct includes the construction, operation and maintenance activities associated with discharges from new and existing landfills.
358. Regarding water quality, the applicant states that the precinct provisions do not replace the rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33, or for erosion and sediment control in Chapters E11 and E12.
359. Proposed objectives and policies have been provided for the precinct and are proposed to be in addition to the overlay, Auckland-wide and zone objectives, and policies. The applicant has also proposed through wording in the precinct that where there is a conflict, the provisions of the precinct would take precedence.
360. The applicant has proposed general restricted discretionary and discretionary standards, and assessment criteria is proposed for restricted discretionary activities and specific criteria is listed under 1617.8.2 for discharges to land and water from legally established landfills. These would replace the current assessment criteria within Chapter E11 of the Auckland Unitary plan when assessing the sediment discharge component of earthworks.

Peer review

361. The applicant's land disturbance assessment has been reviewed for the council by Fiona Harte, a Senior Specialist on erosion and sediment control within the Auckland

Council's Resource Consents Department. A memo from Ms Harte is included in **Attachment 5** of this report.

362. Ms Harte has concerns with Objective 4 (reproduced below) of the proposed precinct as she considers that it could mean that effects relating to land disturbance including sediment discharges, may not be avoided, remedied, mitigated. Instead, they may simply be offset or compensated to the extent reasonably practicable.

4. Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.

363. In Ms Harte's view, the phrase in Objective 4 "to the extent reasonably practicable" is ambiguous and could result in difficulty assessing whether the quantum of offset or compensation is appropriate. Ms Harte recommends that Objective 4 be removed as the current provisions of the RMA and Unitary Plan provide for assessment of the effects management hierarchy. She also notes that the NPS:FM defines the term 'effects management hierarchy' (see below) and Objective 4 is not consistent with this definition.

effects management hierarchy, in relation to natural inland wetlands and rivers, means an approach to managing the adverse effects of an activity on the extent or values of a wetland or river (including cumulative effects and loss of potential value) that requires that:

- (a) adverse effects are avoided where practicable; and
- (b) where adverse effects cannot be avoided, they are minimised where practicable; and
- (c) where adverse effects cannot be minimised, they are remedied where practicable; and
- (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting is provided where possible; and
- (e) if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and
- (f) if aquatic compensation is not appropriate, the activity itself is avoided.

364. Ms Harte also has concerns with Policy 5 (reproduced below) in the proposed precinct as it uses the phrase "generally and to the extent practicable" when referring to avoiding, remedying, and mitigating adverse effects. Ms Harte finds this phrase to be vague and believes it will create uncertainty. For example, if adverse effects associated with a sediment discharge were 'generally' mitigated this would insinuate that the adverse effects have not been sufficiently mitigated and there could be significant residual adverse effects that are not being managed. Ms Harte recommends that Policy 5 be deleted.

5. Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.

365. Ms Harte does not consider the approach of Policy 6 (reproduced below) is best practice as it explicitly provides for significant residual adverse effects. In her view, if a proposal were to have significant residual adverse effects, it would require careful consideration and assessment upfront to make an informed determination on whether the proposal is appropriate to be approved. Providing for significant adverse effects within the precinct prior to an assessment of the merits of a resource consent application dilutes the importance of the values that are impacted or lost, and pre-empts a decision regarding those effects.
6. Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:
 - a. not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;
 - b. any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.
366. Policy 6 also allows offsetting or compensation actions to be staged over the long term, meaning that actions may not be undertaken until many years following the adverse effect. This could result in a time lag between the adverse effect and the offsetting and/or compensation occurring which as a result, can increase the severity of effects. In Ms Harte's view, time lags should not be encouraged in principle and offsetting and/or compensation actions should ideally be undertaken upfront, or if not, as soon as possible after the adverse effect occurs.
367. Ms Harte also notes that *Chapter E11 – Land disturbance – Regional* of the Unitary Plan does not currently contain provision for offsetting or compensation as adverse effects associated with sediment discharges can generally be mitigated through the implementation of best practice erosion and sediment control and onsite management techniques. Ms Harte recommends that Policy 6 be deleted.
368. In Ms Harte's view, the proposed assessment criteria and matters of discretion have been simplified and generalised and they do not incorporate key components of a regional land disturbance assessment. Potential landfill activities will be large scale have a long duration and the receiving environment is sensitive (the Hōteu River, Kaipara Harbour and onsite SEAs, Wetland Management Areas and Natural Stream Management Areas).
369. In light of this, Ms Harte considers the proposed assessment criteria and matters of discretion are lacking and are too general when compared to the current provisions of *Chapter E11 – Land disturbance – Regional*. This could result in difficulty determining the effects to be assessed regarding sediment discharge and the extent of mitigation, the type of information required on future resource consent applications, and the ability to impose consent conditions. Detail from the current provisions in *Chapter E11 – Land disturbance – Regional* of the Unitary Plan is absent and could prevent such matters from being assessed in any future resource consent application. Therefore, Ms Harte recommends that the current assessment criteria and matters of discretion within *Chapter E11 – Land disturbance – Regional* are adopted.

370. Finally, while the private plan change request refers to an adaptive management⁷⁹ approach, there is no mention of this within the proposed precinct. Considering the high ecological value and sensitivity of the receiving environment and the benefits of using an adaptive management regime to avoid or manage potential adverse effects, Ms Harte recommends that adaptive management should be included as a policy and within the assessment criteria for restricted discretionary activities.
371. Overall, Ms Harte can support PC42 from a regional land disturbance/sediment discharge perspective subject to the amendments identified above.

Comment

372. I agree with Ms Harte's concerns with Objective 4 and Policies 5 and 6. These concerns align with a number of other specialists and I recommend these be deleted from the precinct.
373. In addition, I support Ms Harte's recommendation to include a policy and assessment criteria around adaptive management as promotes best practice through ongoing management changes in response to the results of monitoring. It has been referred to by the applicant in the private plan change request. However, there is a disconnect as adaptive management does not appear in the precinct.
374. I also agree with Ms Harte that the proposed assessment criteria and matters of discretion are not sufficient. While I note that section 4.9 of the private plan change request states that "the precinct provisions do not replace the rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33, or for erosion and sediment control in Chapters E11 and E12", I do not consider that the precinct (as written) follows through on this.
375. For the assessment criteria in *Chapter E11 – Land disturbance – Regional* to be considered the precinct text would need to state this explicitly. As the precinct does not state this, I agree with Ms Harte that the precinct should be modified to ensure the assessment criteria under *Chapter E11 – Land disturbance – Regional* apply.
376. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.3 Policies [rp/dp]

...

X. Manage discharges to land and water through an adaptive management regime that includes system monitoring and changes to management in response to monitoring results.

...

I617.8. Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

The council will reserve its discretion to all of the following matters when assessing a restricted discretionary activity resource consent application, in addition to the matters

⁷⁹ Adaptive Management is defined in Chapter J of the Unitary Plan as: "a systematic, iterative process of decision making in the face of uncertainty, with an aim of reducing uncertainty over time through system monitoring and changes to management in response to the results of monitoring".

specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

I617.8.2 Assessment Criteria

The council will consider the relevant assessment criteria below for restricted discretionary activities, in addition to the assessment criteria specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

Discharges to land and water from legally established landfills

...

- X. the extent to which an adaptive management regime will address the cumulative nature and severity of effects when considering the effectiveness of onsite management and monitoring techniques, monitoring of the receiving environment and onsite devices, implementation of adaptations, and reporting.

11.6. Stormwater / flooding

Application

- 377. The private plan change request assesses the effects on stormwater through a number of sections including the overview of the site in terms of groundwater (section 2.3.4) and surface water (section 2.3.5), and in the assessment of effects on groundwater (section 4.6), flooding (section 4.7), and surface water systems (section 4.9).
- 378. The landfill operation will be served by stormwater management infrastructure owned and operated by the landowner generally comprising water quality treatment/detention ponds serving each phase of the landfill process. No stormwater management infrastructure is proposed to be vested to the Auckland Council.
- 379. The applicant's s32 report provides an assessment on the proposal against relevant objectives and policies under the Unitary Plan Chapters B7, E1, E3, D4, D8 and D9 which are related to stormwater, freshwater and ecological significance.
- 380. The private plan change states that the precinct provisions direct that adverse effects should be avoided, remedied and mitigated wherever possible, while recognising that adverse effects on freshwater systems from landfill development in the precinct may be inevitable, due to the nature, scale and locational requirements of landfill development.
- 381. The applicant identifies that any new landfill within the precinct is a discretionary or non-complying activity, therefore, any effects that may arise from a new landfill activity will be assessed and managed through a future resource consent process.

Peer review

- 382. The applicant's stormwater assessment has been reviewed for the council by the Healthy Waters team within the Auckland Council. A memo from Irish Jayawardena, Ken Tomkins, Sarah Nolan, and Melody Mendez is included in **Attachment 5** of this report.
- 383. Mr Jayawardena raises concerns with the site selection process and criteria in relation to stormwater and the receiving environment. He seeks that the applicant provide

additional information on their site selection, option assessment, and site validation process in their evidence for the hearing.

384. Mr Tomkins considers that while the details of landfill phasing and the performance of stormwater detention ponds/wetlands can be considered at the resource consent stage, it would be useful if the precinct had a provision under 1617.9 Special information requirements to require a detailed stormwater management plan.
385. Mr Tomkins is not concerned about increases to off-site flooding in the Hōteu River. However, he does note that for more detailed resource consents, stream assessments will be necessary in some of the tributary streams draining the work sites to confirm whether increases in peak stormwater flows will lead to unacceptable levels of stream instability, erosion or flooding. Mr Tomkins supports the applicant's approach to leachate management (keeping leachate and stormwater separate).
386. Ms Nolan has concerns around existing erosion hotspots, areas of stream bank instability, sediment and contaminant of concerns for receiving environment. However, she acknowledges that such assessments can be undertaken to manage those effects during the resource consent stage.
387. Mr Jayawardena raises concerns (similar to other technical specialists) that some of the proposed wording of the precinct is not consistent with the effects management hierarchy under the RMA, NPS:FW, and the Unitary Plan. He recommends that Objective 4 and Policies 4, 5, and 6 be deleted from the precinct.
388. Mr Jayawardena requests that further clarity be provided around Activity Table 1617.4.1 (A3) (A5) and (A7) pertaining to discharges to land and water from new and existing landfills. He believes it is not clear which relevant underlying zone and Auckland-wide activities are still applicable.
389. Ms Mendez summarises the submissions from mana whenua and notes that they consider that PC42 would diminish Mauri, or the life supporting capacity, of the environment and water. They identified the permanent deposit of waste in Papatūānuku would damage it and create a significant risk of pollution of the Hōteu River, Kaipara Moana and wider environment. Diminished mauri as well as the potential tangible risk of pollution of these waterways would create significant cultural impacts that would deny mana whenua the ability to exercise tikanga, customary rights, Kaitiakitanga and other traditions and values in Te Ao Māori.
390. In conclusion, Mr Jayawardena states that the development of a landfill within the proposed Auckland Regional Landfill precinct would present challenges to the existing and future stormwater environment. However, after reviewing the applicant's assessments he is of the view that from a physical perspective it is feasible to mitigate the risk of stormwater contamination down to an acceptable level within the Hōteu River catchment by using appropriate risk management systems.

Comment

391. I generally agree with the stormwater assessment from Mr Jayawardena, Mr Tomkins, Ms Nolan, and Ms Mendez. While Mr Tomkins advises that downstream flooding is unlikely to be an issue, I support his recommendation to ensure that any resource consent to establish a landfill provides a stormwater management plan.

392. I agree with Ms Nolan's view that detailed matters regarding erosion hotspots, areas of stream bank instability, sediment and contaminants will be able to be adequately assessed at resource consent stage under the precinct provisions.
393. I also note the review of the iwi submissions from Ms Mendez. I have addressed these matters in further detail in sections 11.1, 14.1.10 and 14.8 of this report.
394. I agree with Mr Jayawardena's recommendation that Objective 4 and Policies 4, 5, and 6 be deleted from the precinct. As discussed in more detail in earlier sections, these provisions that refer to the 'effects management hierarchy' are unnecessary and have the potential to add confusion in light of the existing framework in the RMA, NPS:FW, and Unitary Plan.
395. I also acknowledge the concern of Mr Jayawardena that there is some confusion around which provisions from the underlying zone and Auckland-wide chapters are relevant in the precinct. I recommend that additional wording at the start of the objectives and policies be included to clarify this. In terms of the activities, I note that the Unitary Plan is already quite clear through C1.6(4) that only activities that are replicated in the precinct take precedence over the activity status in the zone. Therefore, I do not consider any text changes are required to the activity table on this matter.
396. In light of the above, I recommend a number of modifications to the precinct provisions. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

1617.1 Precinct Description

...

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

...

The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or on some matters offset/compensate adverse effects, including adverse effects on ecological/freshwater and mana whenua values, that may be created by these activities to the extent practicable.

...

1617.2 Objectives [rp/dp]

~~The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, except where there is a conflict, in which case these objectives take precedence.~~

In addition to the objectives specified above, all relevant overlay, Auckland-wide and zone objectives apply in this precinct:

...

4. ~~Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.~~

...

I617.3 Policies [rp/dp]

~~The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4).~~

In addition to the policies specified above, all relevant overlay, Auckland-wide and zone policies apply in this precinct - with the exception of the following:

- E13.3(4)
- ...

...

4. ~~Subject to policy 5, provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill.~~
5. ~~Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.~~
6. ~~Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:
 - a. ~~not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
 - b. ~~any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~~~

...

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

- (1) Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS

...

- Stormwater Management Plan
(demonstrating: location and extent of infrastructure including areas of on-site stormwater management; staging of development; functionality of stormwater treatment and mitigation systems throughout all phases including aftercare; and an assessment of downstream flooding, erosion impacts and appropriate mitigation measures)

...

11.7. Industrial and trade activity stormwater quality

Application

397. The applicant has summarised the effects of PC42 associated with groundwater, flooding, and surface water in sections 4.6, 4.7 and 4.9 of the private plan change request. In addition, there are also specialists reports in the Technical Appendices and the additional information requested under Clause 23 (and Section 92) of the RMA.
398. Business activities result in typically more operational and vehicle generated contaminants than residential activities due to a higher volume of vehicle movements and the potential for large car parks. The potential landfill activity under PC42 is listed as a high-risk activity in the Unitary Plan and is therefore subject to the controls and requirements of *Chapter E33 - Industrial or trade activity*.

Peer review

399. The applicant's information covering industrial trade activity and stormwater has been reviewed for the council by Arsini Hanna, a Senior Specialist Advisor within the Auckland Council's Stormwater Wastewater & Industrial and Trade Activities Specialist Unit. A memo from Ms Hanna is included in **Attachment 5** of this report.
400. Ms Hanna notes that the private plan change request recognises that landfills have the potential to discharge contaminants and hazardous pollutants with potentially significant adverse effects on the environment. However, she considers that the potential effects can be mitigated through various stormwater management techniques. The details of how this will be achieved for any specific development would be determined through a future resource consent process. Ms Hanna points out that PC42 does not 'enable' a new landfill but still requires a resource consent for a discretionary activity where the above matters can be considered.
401. Further to this, Ms Hanna identifies that the proposed Auckland Regional Landfill Precinct is still subject to the objectives, policies and rules of *Chapter E33 - Industrial and trade activities* of the Unitary Plan. Therefore, it is her view that the precinct does not diverge from the policy direction of the Regional Policy Statement with regards to industrial and trade activities.

402. Ms Hanna states that *Chapter E9 - Stormwater quality - High contaminant generating car parks and high use roads* of the Unitary Plan applies to any development which meets the definition of a high contaminant generating car park or high use road. Again, the provisions in the proposed precinct do not replace any of the provisions in E9. Ms Hanna does not consider that there are any specific characteristics about the site of the proposed precinct that mean it would not be possible for suitable mitigation to be established through a resource consent process.
403. With regards to stormwater damming, Ms Hanna states that as the precinct is silent on this the activity is still covered by the underlying Auckland-wide provisions of *Chapter E7 - Stormwater damming*.
404. Overall, Ms Hanna concludes that she is able to support PC42 as the effects on the environment related to stormwater quality (particularly in relation to E9 and E33) can be adequately assessed at the resource consent stage. Ms Hanna does not raise any issues with the proposed activity status in the precinct for establishment of new landfills noting that the existing Unitary Plan provisions of *Chapter E8 Stormwater Discharges and Diversion*, *E7 – Stormwater damming*, *Chapter E9 - Stormwater quality - High contaminant generating car parks and high use roads*, and *Chapter E33 - Industrial and trade activities* will continue to apply to the precinct.
405. Consequentially, Ms Hanna does not recommend any changes to the precinct provisions.

Comment

406. I agree with Ms Hanna in relation to her assessment, particularly linked to Chapters E7, E9 and E33 of the Unitary Plan. The proposed precinct provisions do not seek to override these Auckland-wide provisions and therefore any activity within the precinct will still be assessed on these matters through the Auckland-wide provisions. I also note that Ms Hanna does not consider that there are any specific characteristics about the site of the proposed precinct that mean it would not be possible for suitable mitigation to be established through a resource consent process.
407. Based on the above, I do not recommend any amendments to the proposed precinct.

11.8. Transport

Application

408. Section 4.13 of the private plan change request assesses the suitability of the site with respect to traffic. The applicant states that proximity to the state highway network was a key consideration in the site's selection. WMNZ also state that while the secondary road network in the rural area receives a regular flow of heavy traffic related to farming, a regional landfill facility with truck movements likely in excess of one million over its lifetime means that access to a primary regional haul route is essential. They note that previous landfill consent processes have confirmed the critical importance of this.
409. The applicant also provides an assessment of the potential implications of a landfill being established in the proposed precinct with an Integrated Transport Assessment ('ITA') (Technical Report M) and a further information response regarding transport in Appendix G of the private plan change request. These assessments conclude that the road network can accommodate the potential traffic volumes associated with a landfill operation.

410. Specifically, the ITA states that in terms of trip generation:
- In 2028, it is estimated that there will be a peak of 520 waste truck movements per day (inclusive of inbound and outbound directions of travel) spread over any 24-hour period, of which 30 waste truck movements are anticipated to occur during the AM peak hour. Meanwhile, in the PM peak, a further 30 waste truck movements are anticipated.
 - In 2028, it is estimated that there will be a peak of 220 non-waste movements per day, and a peak intensity of 25 non-waste vehicle movements during the busiest hour of the peak 4-hour periods around work shift changes.
 - The traffic generated by the site is only expected to represent approximately 3% of the traffic on SH1 in the morning peak hour and 1% in the evening peak hour.
 - In the peak hour, all waste trucks are considered to arrive from and depart to the south.
 - In 2060, it is estimated that these truck numbers will be factored up by 56% to reflect a 1.4% growth per annum in waste for the period 2028 – 2060 (to a total of 811 waste truck movements per day).
411. In terms of road safety, the applicant has assessed the impact of the additional heavy vehicle traffic volumes on the road safety along SH1 south of the proposed precinct. This assessment was in response to the council's concern around the high proportion of head-on, overtaking and turning crashes that had occurred on SH1 along this section and that more heavy vehicle movements may exacerbate this trend.
412. The applicant noted that this section of SH1 already carries a high heavy vehicle proportion, both during the weekday and on the weekend, with heavy vehicle proportions varying between 8% to 15% in 2019. The potential landfill activity is expected to increase heavy vehicle volumes by 12% to 13% in 2028, taking the proportion of heavy traffic within the weekend peak four-hour periods to 11% of the total peak traffic volume (i.e. an increase in total heavy vehicles of approximately 1%).
413. The applicant acknowledges that the increase in heavy vehicles will have some impact on traffic flows and speeds. However, the provision of various passing and slow lanes as currently exist (in part) and as being upgraded within the current New Zealand Transport Agency ('NZTA') safety improvements through the Dome Valley, will assist in the mitigation of any negative effects additional vehicles may have compared to the existing environment. The applicant also notes that the projected volumes and proportions of heavy traffic carried along the highway while giving rise to additional traffic flows along the highway are not greatly inconsistent with other periods of heavy traffic movements at other time of the week.
414. NZTA's Dome Valley Safety improvements are expected to be completed well in advance of any potential construction of a landfill on the site. They are expected to positively address the high proportion of overtaking crashes and provide a more consistent speed environment.
415. The applicant states that any specific construction related traffic matters can be addressed through a Construction Traffic Management Plan.
416. The applicant also highlights that the proposed precinct provisions do not replace the provisions in *Chapter E27 – Transport* in the Unitary Plan. These Auckland-wide transport provisions would still apply for any activity within the precinct.

Peer review

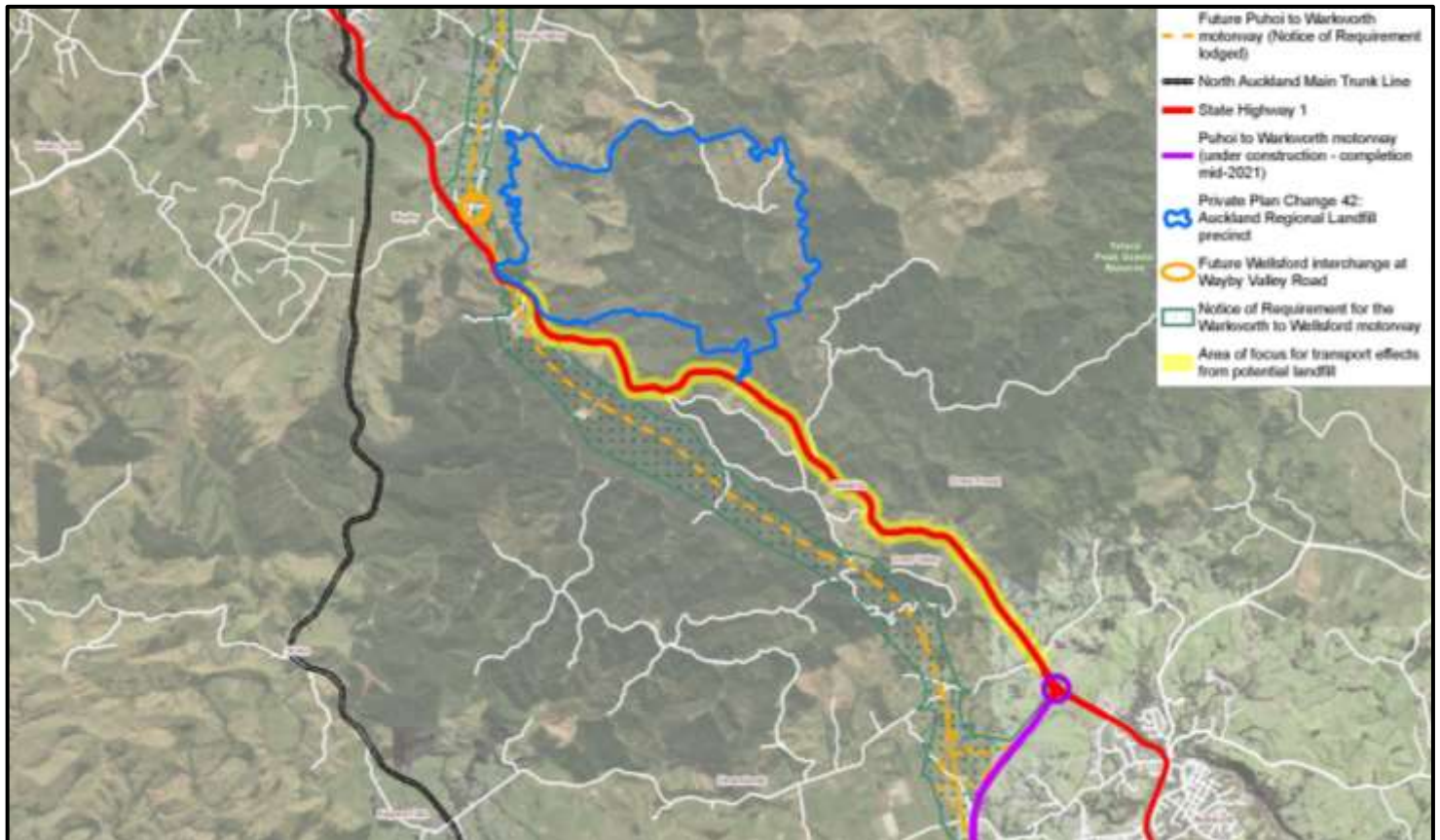
417. The applicant's transport assessment has been reviewed for the council by Gary Black, a Principal Transportation Engineer with Harrison and Grierson. A memo from Mr Black is included in **Attachment 5** of this report.
418. Mr Black notes that the ITA is primarily for the separate resource consent application and is therefore an assessment for a specific landfill proposal. While PC42 sets up a high-level framework under which a landfill proposal could apply for a resource consent (rather than a specific proposal), the ITA does provide a good idea of the likely transport effects of a potential landfill that might be consented under the precinct.
419. Mr Black notes that at a high-level, the proposed precinct provisions do not align with the strategic transport objectives of Auckland Council or the Government. Both the council and government have a strong policy direction towards safety, efficiency, and health effects. However, the applicant's ITA provides no consideration of alternatives to road transport for transportation of waste to the landfill site. In particular, there is no feasibility assessment or investigation into the option of waste by rail. Therefore, Mr Black recommends that provisions be added to the precinct that encourage alternative transport options to be evaluated when applying for a resource consent.
420. Based on Mr Black's review of the ITA and the private plan change request's assessment of effects in relation to transport, he is of the view that the level of vehicle trips generated by a potential landfill within the precinct can be accommodated within the road network without significant effects on the road network efficiency.
421. However, Mr Black notes that the proposed precinct provisions do not place any restrictions on heavy vehicle traffic volumes, and these are also not restricted by the underlying *Chapter E27 – Transport* provisions. Therefore, Mr Black considers that the precinct provisions would not remedy or mitigate adverse effects of the transportation of waste and he recommends the precinct add a new standard that limits waste truck movements to 1,000 a day.
422. Mr Black notes that while there are inherent safety issues on SH1 near the proposed precinct, NZTA are currently undertaking safety improvements including centreline widening, shoulder widening and passing bays. Any construction work for a potential landfill would only occur after these safety improvements have been implemented. Mr Black is satisfied that these improvements will address the safety issues.
423. Mr Black agrees with the applicant that the provision of a Construction Traffic Management Plan is an appropriate mechanism to ensure construction has a minimum impact on the safety and efficiency of the adjacent transport network. He recommends the precinct include this as a Special information requirement for landfill applications.
424. Mr Black also considers it is appropriate that the Unitary Plan transport standards in *Chapter E27 – Transport* will continue to apply to activities in the precinct.
425. Mr Black is able to support PC42 subject to the amended provisions he refers to above.

Comment

426. I agree with the assessment of Mr Black in relation to transport effects. In my view, the wider transport effects from a potential landfill on the site are largely addressed by the Puhoi to Warkworth motorway project, scheduled to finish mid-2021. This project will extend the motorway from the Johnstone's Hill tunnels to just north of Warkworth. The

motorway will connect back with the existing SH1 via a round-about just south of Goatley Road.

427. I consider that the motorway is the appropriate transport route for heavy vehicle movements such as this. As the bulk of trips to the potential landfill will be from the south, it is my view that the traffic effects in relation to congestion and safety are then narrowly focussed on the stretch of SH1 between the end of the Puhoi to Warkworth motorway (the roundabout) and the precinct site, as shown in Figure 16 below.



428. I also note that NZTA has lodged a Notice of Requirement to extend the motorway from Warkworth to Wellsford. An interchange is planned for Wayby Valley Road, just some 1.5km from a potential entrance point to the precinct, as also shown in Figure 16. Should this project be designated and constructed, it would largely negate the congestion and safety concerns around the proposed precinct. While the project is being designated now, there is currently no funding for construction. While there is also no firm timetable for construction, I do note that the Notice of Requirement refers to a potential start date of 2030 and a construction period of seven years.

429. In terms of traffic generation effects, I agree with Mr Black that the current network will be able to accommodate the increase in traffic, subject to an upper limit for waste truck movements being added to the proposed precinct. In terms of safety, again I agree with Mr Black that the current safety works for the Dome Valley section of SH1 will adequately address safety issues.

430. I am also in agreement with Mr Black that the precinct provisions should include provisions that will encourage the use of alternative transport means such as rail or electric vehicles to promote efficiency and reduce the effects on health and safety. The

precinct should also require a Construction Traffic Management Plan with landfill applications to properly manage this period of the potential project.

431. Therefore, I recommend that the changes proposed by Mr Black be included in the proposed precinct provisions. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.2 Objectives

X. The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.

...

I617.3 Policies

X. The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste where feasible.

...

I617.6(1) Restricted Discretionary Standards

...

X. The waste truck movements shall not exceed 1,000 truck movements per day.

...

I617.6(2) Discretionary Standards

...

X. The waste truck movements shall not exceed 1,000 truck movements per day.

...

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

(1) Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS

...

INITIAL CONSTRUCTION

- Construction Traffic Management Plan
- ...

11.9. Geotechnical

Application

432. Section 4.3 of the private plan change request provides an assessment of the geology of the area supported by a Geotechnical Factual Report, Geotechnical Interpretive Report, and a Probabilistic Seismic Hazard Assessment (Technical Reports A, B and C). In addition, there is a Geotechnical Addendum Report, which incorporates findings from more detailed ground investigations.
433. The applicant's assessment acknowledges that there are pockets of historic land instability within the proposed precinct, including a couple of potential historical areas of landslips within Sub-precinct A. The applicant states that these could be assessed and managed during the detailed design and consenting of a potential landfill and that this risk could be appropriately managed through design and construction measures.
434. The applicant considers that the primary slope instability hazard in the precinct area (including the probable historic landslides within Sub-precinct A) is likely to be instability associated with groundwater seepage at the soil and rock interface. The applicant notes that no evidence of more deep-seated slope instability within the bedrock has been observed.
435. In terms of seismic risk, the applicant's study found that the proposed Auckland Regional Landfill site is in an area of relatively low seismicity compared to the rest of New Zealand. There are no active faults present within 20km of the project site and no significant fault zones were encountered in geotechnical investigations.
436. The applicant's site-specific study predicted lower levels of shaking during a hypothetical earthquake event than specified in the landfill seismic design standards. Therefore, the applicant concludes that the adverse effects of seismic risk are expected to be minimal and within accepted engineering standards if the project is designed to meet the relevant seismic design standards.
437. The applicant also reports that the rock and soil materials available on site are generally suitable for liner construction and landfill operation.

Peer review

438. The applicant's geology assessment has been reviewed for the council by Ross Roberts, the Auckland Council's Geotechnical and Geological Practice Lead in the Specialist Delivery Unit. A memo from Mr Roberts is included in **Attachment 5** of this report.
439. Mr Roberts states that it is apparent from the applicant's technical assessments, other data sources, and a site walkover that the area of the proposed precinct is subject to geotechnical instability. However, the evidence strongly suggests that the instability is limited to the surficial soils and does not extend into the bedrock.
440. Mr Roberts therefore considers that the slope stability hazards that exist on the site can be managed with conventional geotechnical engineering techniques. He notes that the existing shallow instability has occurred under current high rainfall conditions and any geotechnical design will need to be based on measured groundwater levels which will, by default, represent the high rainfall that exists at the site. Construction of cut and fill slopes is common in areas of high rainfall and can be managed with suitable controls.

441. Mr Roberts notes that as a potential landfill is progressively filled, the additional mass at the toe of the slopes would, over time, increase the stability of the slopes and would be expected to result in a more stable slope than currently exists. Therefore, any reduction in slope stability would only apply during the construction of a potential landfill.
442. In terms of material availability Mr Roberts states that it is likely that most of the fill materials required will be available on site. Some importing of material may be required but this is unlikely to be a significant geotechnical effect. Rather, should material import be required, the main effects would be around additional traffic movements.
443. Mr Roberts states that the applicant's findings that the proposed precinct is located in a low seismic area relative to other parts of New Zealand aligns with his expectations based on his experience in the region.
444. Overall, Mr Roberts considers there is no geotechnical reason to recommend PC42 be declined and he does not consider any amendments to the precinct provisions are necessary in relation to geotechnical matters.

Comment

445. I agree with Mr Roberts' review of the applicant's geology assessment. While there is some instability with the proposed precinct area, it appears to be limited to instances of groundwater seepage at the soil and rock interface. There is no evidence that there is instability in the bedrock.
446. In terms of a possible landfill activity, the stability of the bedrock is important to prevent any land movements undermining the geotechnical integrity of the landfill. I agree with Mr Roberts' view that the applicant has demonstrated that the only known instability is at a superficial level and this can be adequately mitigated through design and construction measures. I also agree with Mr Roberts that as a potential landfill is filled it will result in a more stable slope than currently exists. In addition, I note he accepts that the seismic risk in this area is low.
447. There is no information available to accurately determine the actual volume of fill that may be required to be imported. The potential for suitable fill material being required to be bought to the site does, in my mind, raise some concerns around the potential effects on transport. The Technical Guidelines for Disposal to land (2018) (see section 3.4.2 of this report) state that an assessment of a site's suitability for a municipal landfill should cover "the availability of on-site materials for lining, cover and capping" and for potential "construction of dams and drainage systems".
448. Should a significant amount of fill be required to be imported into the site, it would begin to question one of the factors in the site's suitability for a potential landfill. I do not consider a potential shortage of fill material to necessarily be a fatal flaw in terms of the site's suitability, but I do recommend that the precinct provisions be amended to address the potential transport implications from imported fill. I recommend that the proposed precinct include an additional policy that limits the potential for imported fill, and where it is required, innovative transport solutions must be used to manage the effects on transport.
449. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

1617.3 Policies

-
- X. Discourage the importing of fill material to the site for liner construction and landfill operations and where it does occur require that innovative and/or alternative forms of transport are used such as rail or zero-emission transport.
-

11.10. Waste acceptance criteria and environmental risk

Application

450. The private plan change request does not directly addresses waste acceptance criteria and environmental risk. However, the applicant included reports on Waste Acceptance Criteria, Risk Management Assessment, and Health Risk Assessment Report (Technical Reports O, S and T). These reports were prepared primarily to inform the related resource consent application, but also have some relevance to the private plan change request.
451. The applicant states that the focus of the assessment undertaken to support the private plan change request is on the actual or potential environmental effects arising from the proposed precinct provisions, and not on the effects that might arise from a landfill itself (as this will occur as part of the consent application process). Accordingly, only limited information has been provided with the private plan change request which is specific to waste acceptance and environmental risk. The application refers to the technical documents provided in support of the resource consent application.
452. The information that is provided by the applicant with respect to waste acceptance and environmental risk is limited to an acknowledgement that leachate generated by degrading waste has the potential to migrate into groundwater and contaminate it. The application states that potential effects on groundwater quality will be largely avoided by the design and construction of an appropriate landfill lining system which captures the leachate, and through waste acceptance criteria to control the properties and characteristics of the leachate.
453. The applicant concludes that there will be no additional effects arising from the proposed precinct that would not have arisen under the Unitary Plan as it currently exists.

Peer review

454. Natalie Webster, the Technical Director for Contaminated Land at Pattle Delamore Partners Limited, has reviewed for the council the issues around waste acceptance criteria and environmental risk associated with the proposed precinct. A memo from Ms Webster is included in **Attachment 5** of this report.
455. Ms Webster has concerns that the proposed precinct objectives do not adequately cover the underlying and regionally significant potable aquifer. She notes that Objective 4 provides a mandate for rivers, lakes, streams and wetlands to be considered and Policy 3(d) covers aquifers that provide water for domestic and municipal supply. However a specific objective relating to the protection of groundwater resources has not been included.
456. Ms Webster considers that given the regional importance of this groundwater resource for both municipal, agricultural, and industrial supply, the precinct should incorporate a

specific objective regarding groundwater/aquifer water quality (and quantity) as it is relevant to the protection of human health and ecological receptors.

457. In addition, Ms Webster also considers that the proposed precinct should include more specific consideration of landfill closure and aftercare. This would make it clear that to be granted a resource consent a potential future landfill application must assess these aspects, which are an important part of the ongoing prevention of discharges in the long term.
458. Finally, Ms Webster also considers that to prevent adverse environmental effects from the landfill activity, specific mention should be made in the precinct policies to waste acceptance procedures. This gives a clear steer to a resource consent applicant and processor that certain types of waste (which may have an adverse effect on human health or the environment if discharged) would not be accepted into the landfill.

Comment

459. I agree with Ms Webster's review of the issues around waste acceptance criteria and environmental risk associated with the proposed precinct.
460. Therefore, I recommend that, the precinct provisions be amended (as outlined in Mr Ms Webster's memo) to add to the objectives and policies to elevate the importance of groundwater in any future assessment of a resource consent application. An amendment to the standards is also necessary to give more direction around considering landfill closure and aftercare, as well as waste acceptance.
461. In addition, while I consider it to be a low risk, I agree with Ms Webster's recommendation that the precinct should explicitly restrict the number of new landfills within Sub-precinct A to one.
462. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

1617.2 Objectives [rp/dp]

...

3. The Auckland Regional Landfill is designed and operated so that the adverse effects of discharges to land and water, including groundwater, from the landfill are avoided, remedied or mitigated.

1617.3 Policies

3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
- a. adverse effects on the quality of freshwater, including groundwater, including from contamination and sediment;
 - b. adverse effects from contaminants, and the potential for these to enter freshwater, including groundwater from both point and non-point sources;
 - c. adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and

- d. adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply;
- e. adverse effects on the quality of air, including from the discharge of contaminants and odour;

including through the adoption of:

- the best practicable option for the treatment and discharge of stormwater;
- the use of industry best practice lining system;
- waste acceptance procedures and criteria that prevent the acceptance of waste that could result in discharges that could adversely affect human health and / or environmental receptors;
- closure and aftercare procedures and monitoring that are industry best practice for these activities at the time of implementation; and
- the provision of an appropriate buffer within the precinct.

...

1617.6(2) Discretionary Standards

...

- X. Only one landfill may be established in Sub-precinct A.

11.11. Landfill engineering and landfill operations

Application

- 463. The private plan change request includes information to establish the suitability of the precinct for landfill construction and operation without undue risk of significant environmental effect. The proposed precinct specifies the minimum standards a lining system must meet to mitigate against leachate escape, a key risk of a potential landfill.

Peer review

- 464. Alan Pattle, the Technical Director of Water and Geotechnics at Pattle Delamore Partners Ltd has reviewed the private plan change for the council in regard to landfill engineering and operations. A memo from Mr Pattle is included in **Attachment 5** of this report.
- 465. Mr Pattle states that the geology within the proposed landfill footprint identified in Sub-Precinct A includes variably weathered and fractured Pakiri Formation bedrock and associated residual soils. Much of the bedrock and residual soils have low permeability, which he considers can provide good natural containment. The deeper bedrock is fractured which has potential to provide more rapid pathways for the passage of any escaped leachate. Mr Pattle notes that additional engineering measures, involving the addition of extra clay liner thickness will need to be provided where fractured rock occurs close to the base of the landfill to provide additional backup protection. The rock and soil materials available on site are generally suitable for liner construction and landfill operation.
- 466. Mr Pattle notes that several existing landfills in the Auckland region are sited on similar geology and topography. These include Hampton Downs and Whitford Landfills – both regional scale landfills like that which would be enabled in Sub-precinct A. He considers that the relatively uneventful operation of these landfills in terms of leachate containment provides reassurance that this type of site setting is suitable for landfilling activity.

467. Mr Pattle notes that a potential landfill within the precinct would be a permanent piece of infrastructure that would become part of the local environment in the long term. He states that in the early stages of development there will be adverse effects that cannot be avoided or mitigated due to the occupation of the precinct land and waterways by the facility. These adverse effects include the loss of streams, springs and ecology within the precinct. This is acknowledged in policy I617.3 (5).
468. Mr Pattle accepts that normally it would be undesirable include a policy that foresees the loss of such natural resources in the precinct. However, in Mr Pattle's experience it is very difficult to find landfill sites that do not in some way impact one or more water courses. The size of regional scale landfills in relation to upper stream catchments in the Auckland region (because of the geology), would make siting of landfills that avoid watercourses anywhere in the region extremely difficult. Mr Pattle considers the inclusion of the policy to be necessary to acknowledge this reality.
469. Mr Pattle considers that the proposed precinct provisions regarding aftercare of the landfill are limited. Although the adverse effects on the environment from discharges would be expected to diminish as the waste stabilises towards an inert state, this process may be longer than the operational period that precedes it. Mr Pattle therefore recommends strengthening the precinct objectives under I617.2 to recognise the long-term impacts that the precinct would facilitate.
470. Specifically, Mr Pattle considers that an objective should be added to manage the waste in the landfill so that it is stabilised into an inert state as rapidly as possible, without compromising the other environmental objectives. Attainment of a stabilised state in the waste reduces the aftercare period and associated time related risks. The nature of waste accepted into the landfill, the design of the containment system (landfill liner and cap), and management of the landfill operations all influence how long the waste takes to stabilise through the various biochemical processes that take place. Mr Pattle would like to see these matters covered by an objective so that end use activities can proceed as soon as possible after the landfill's closure. He also recommends aftercare be further addressed through the proposed precinct Assessment Criteria in I617.8.2. (10).
471. Mr Pattle also notes that the proposed precinct Objective I617.2(3) mirrors the underlying Unitary Plan Objective E13.2.(1) of *Chapter E13 – Cleanfills, managed fills and landfills* in that it refers to "designed and operated" so as to avoid adverse effects of discharges. However, Mr Pattle considers that adding the word "construction" is necessary. He notes that the competent construction of the landfill liner has a significant bearing on its performance as a leachate and gas containment barrier and its effective lifetime. Research has shown a significant reduction in effective lifetime of High Density Polyethylene liners if they are constructed with wrinkles, put in tension, and/or subjected to localised stretching (indentations) from overlying or underlying granular materials.
472. Mr Pattle goes on to identify that the proposed precinct Objective I617.2(3) should have the word "air" added to it. This is because the air is an important component of the environment. The minimisation of odour, in particular, is a significant and ongoing challenge for landfill operations as it is inherent in the handling and control of substances that are undergoing active biodegradation.
473. Finally, Mr Pattle acknowledges the intention of the proposed precinct Standards I617.6(1)(3) and I617.6(2)(2) that define the minimum landfill liner standard to be used for any landfill in the precinct. While items (a) and (b) (Type 1 and Type 2 standards)

meet current industry best practice, Mr Pattle considers that the wording of the precinct standards should ensure that advances in liner best practice are applied in the future.

474. Overall, Mr Pattle concludes that he is able to support the proposed Auckland Regional Landfill precinct subject to the changes he outlines above.

Comment

475. I agree with the analysis of Mr Pattle outlined above. In particular, I agree that some environmental effects from a landfill development will not be able to be avoided, and this is a fact not unique to this particular site. While I note Mr Pattle's support for Policy 5 due to its acknowledgement that some adverse effects cannot be avoided by a landfill development, in other parts of this report, I have recommended that this policy be deleted from the precinct. This is based on advice from other technical specialists including the council's Freshwater Ecologist, Mr Lowe, who considers that the effects hierarchy is better served by the underlying provisions. I agree with Mr Lowe and I consider that the deletion of Policy 5 will also address Mr Pattle's concern, as the underlying provisions also acknowledge that some environmental effects may not be able to be avoided.
476. I also agree that further provisions to strengthen the aftercare regime are necessary, as is the addition of "construction" to the consideration of the landfill liner. I accept Mr Pattle's advice in relation to the addition of "air" to Objective 3 and requiring the landfill liner to be best practice rather than 'hard-coding' only the current day standards into the proposed precinct.
477. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

...

1617.2 Objectives

...

3. The Auckland Regional Landfill is designed, constructed and operated so that the adverse effects of discharges to land, air and water from the landfill are avoided, remedied or mitigated.

...

- X. The Auckland Regional Landfill is designed and operated so that the waste becomes stabilised to an inert state as quickly as practicable following placement to enable timely transition to productive end use after landfill closure.

...

1617.3 Policies

- X. Require the use of waste acceptance criteria, operational practices and closure measures that optimise the stabilisation of the waste as quickly as possible following emplacement in the landfill. The aspects to be controlled include arrangement, compaction and moisture levels in the waste and landfill gas production.

...

1617.6 Standards

1617.6(1) Restricted Discretionary Standards

...

- (3) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types: ...

...

I617.6(2) Discretionary Standards

...

- (2) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types: ...

...

Assessment Criteria I617.8.2.

...

- (10) the adequacy of the site aftercare plan including:
- a. aftercare activities to address the risk posed by the contaminants to the environment: and
 - b. timing and standard of aftercare activities to efficiently and effectively transition to the end use.

11.12. Air quality

Application

478. Sections 4.4 and 4.5 of the private plan change request assess the suitability of the site with respect to air quality. The assessment relies on an Air Quality Assessment Report (Technical Report D). The assessment primarily relies on the separation distances from Sub-Precinct A to nearby activities sensitive to air discharges. It is noted that Sub-Precinct A has more than 1km separation distance from neighbouring dwellings, and the underlying Rural Production Zone and plantation forestry environment provide for a suitable location with respect to air quality, including reduced air quality amenity expectations.
479. The applicant states that a key rationale for seeking to establish the Auckland Regional Landfill precinct is to introduce statutory recognition of the proposed landfill, so that any development near to the precinct is less likely to cause reverse sensitivity effects into the future. The avoidance of reverse sensitivity effects (such as that introduced by residential subdivision near to the potential landfill) is considered to be a positive effect in the application.
480. The applicant states that operational controls to minimise air quality effects from any future landfill within the proposed precinct would be assessed as part of any future resource consent application. The assessment concludes that “given the large separation distances and the underlying zoning, there are no air quality effects which cannot be addressed through a resource consent process.”

Peer review

481. The applicant’s air quality, odour and dust assessment has been reviewed for the council by Paul Crimmins, a Senior Specialist within the Contamination, Air & Noise Team of Auckland Council’s Specialist Unit. A memo from Mr Crimmins is included in **Attachment 5** of this report.
482. Mr Crimmins has assessed the suitability of the location of the proposed precinct with respect to air quality. He considers that the location of Sub-Precinct A is suitably

separated from activities sensitive to air discharges. However, he recommends that this separation distance is maintained by avoiding the establishment of any activities sensitive to air discharges within the precinct.

483. Mr Crimmins has also assessed the meteorology (climate and weather) of the proposed precinct location. He notes that the wind conditions and rainfall can impact air quality effects from a landfill. Higher rainfall can increase landfill gas generation, although he considers modelling as part of the application is suitably conservative to account for this higher rainfall. Specific wind conditions may direct odour or hazardous air pollutants toward sensitive receptors. However, Mr Crimmins endorses the applicant's dispersion modelling methodology that indicates that the complex terrain and meteorology of the precinct area are unlikely to preferentially direct air discharges toward any sensitive receptor to such a point that the location of the precinct is unsuitable.
484. Furthermore, in terms of meteorology Mr Crimmins notes that lightning strikes have the potential to cause fires at waste sites. However, he does not consider the likelihood of lightning strike causes significantly greater or unmitigable risks to a potential landfill at this location to such a degree that the proposed precinct location is unsuitable.
485. Mr Crimmins also assesses the suitability of the proposed precinct location due to the distance from the main source of waste generation (Auckland, 80kms south) and the likelihood of diesel trucks being used to transport waste there, with associated exhaust emissions of hazardous air pollutants⁸⁰. He concludes that the health effects from exhaust emissions are not likely to be significant at any specific receptor. However, the wider health risks of these hazardous air pollutant emissions (in terms of the mass discharges to air and resulting population exposure) could be eliminated altogether if diesel heavy vehicles were not used. He goes on to recommend amendments to the proposed precinct to discourage vehicle emissions.
486. As section 4.2.1 of the private plan change request highlights the challenges of reverse sensitivity being a reason to establish the Auckland Regional Landfill precinct, Mr Crimmins considers that the precinct should cover the potential for sensitive activities establishing within the precinct. Therefore, he recommends that Activities sensitive to air discharges⁸¹ are made non-complying within the precinct.
487. Mr Crimmins considers that the proposed precinct's provision for air discharges from landfills generally aligns with the wider Unitary Plan and, in practice, an air discharge consent application lodged under the proposed precinct provisions would still be subject to a robust assessment of effects.
488. Mr Crimmins' overall conclusion is that the location and size of the proposed precinct enables the maintenance of separation distances to activities sensitive to air discharges outside of the precinct and that any future air discharge activities would require a robust air quality assessment as part of a consent application under the precinct provisions. Subject to modifications to the precinct to address the above concerns, Mr Crimmins supports PC42 with regards to air quality.

⁸⁰ As noted in Attachment 10 of this report, the effects on climate change from truck emissions related to the potential landfill cannot currently be considered under the RMA.

⁸¹ *Chapter J – Definitions* of the Unitary Plan defines Activities sensitive to air discharges as "Activities sensitive to reduced air quality. Includes: dwellings; care centres; hospitals; healthcare facilities with an overnight stay facility; educational facilities; marae; community facilities; entertainment facilities; and visitor accommodation.

Comment

489. I agree with Mr Crimmins' review of the applicant's air quality assessment. I concur that there are no specific meteorological factors (wind, rain, lightning strike) that would make this site unsuitable from an air quality standpoint. In addition, the large area of the proposed precinct enables there to be large separation distances to the limited sensitive receptors.
490. The map in Figure 17 in section 11.18 of this report shows that there are currently no buildings with activities sensitive to air discharges within 1km of the boundary of Sub-precinct A.
491. I agree with the changes to the precinct as recommended by Mr Crimmins for the reasons outlined in section 5.3 of his memo. These are replicated below:
- Objective 2: To broaden the scope so that human health, ecology and amenity are protected from adverse effects (for example, from odour discharges).
 - Policy 1: To highlight the importance of maintaining adequate separation distances between Sub-Precinct A and activities sensitive to air discharges to enable the continued operation of the landfill (minimising the potential reverse sensitivity effects). This Policy follows from Objectives 1 and 2.
 - Policy 3: To highlight the importance of industry best practice landfill gas controls to minimise air quality effects. This Policy follows from Objective 2.
 - New Policy: To minimise discharges of hazardous air pollutants from vehicles accessing the Precinct, including by prioritising the use of rail or zero-exhaust emission transport. This Policy follows from Objective 2.
 - New Rule: To introduce a Non-complying Activity Rule for the establishment of activities sensitive to air discharges within the precinct to minimise reverse sensitivity effects on the landfill and give effect to Objective 1 and Policy 1.
 - Restricted Discretionary and Discretionary Standards: To remove reference to 'ancillary activities' (not defined) and align the wording regarding offensive or objectionable odour with the recommendations of Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour and section 38 of the RMA.
 - RD matters of discretion: To include 'previous complaint history' as a matter of discretion, noting this is a matter of discretion for air discharges from waste processes in E14.8.1(12), and that the Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour recommends the consideration of previous complaint history as part of an odour assessment for an existing operation.
492. Of note, I agree with Mr Crimmins that activities sensitive to air discharges should be a non-complying activity within the proposed precinct. While at this point in time it would seem unlikely that WMNZ would choose to sell parcels of land within the precinct, circumstances can change, and it is not outside the realms of possibility.
493. The applicant states in the private plan change request that if any land within the precinct was to be sold, WMNZ would require a covenant to be placed upon the title, as well as an easement relating to the generation of nuisance effects. While I support

WMNZ's intentions, I do consider that a more robust approach is necessary. The addition of the non-complying activity gives greater protection to a potential landfill operation from reverse sensitivity issues.

494. In light of the discussion above, the recommended changes to the precinct are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.1 Precinct Description

...

The remaining land within the precinct will be used for a range of activities associated with the landfill operations and energy generation. These associated activities include (but are not limited to) bin exchange area, stormwater treatment, access roads, soil stockpiles, gas and leachate collection and treatment, workshops, office facilities, and clay borrow. No new sensitive activities are to be located with the Precinct so that the site's advantage of a large buffer area from neighbouring sites is not compromised.

...

I617.2 Objectives [rp/dp]

2. Human health and the environment are ~~is~~ protected from adverse effects of operational or closed landfills.

...

I617.2 Policies [rp/dp]

1. Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation, including by maintaining adequate separation distances to activities sensitive to air discharges.
- ...
3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
 - ...
 - e. adverse effects on the quality of air, including from the discharge of contaminants and odour; including through the adoption of the best practicable option for the treatment and discharge of stormwater, the use of industry best practice lining and landfill gas control system, adoption of appropriate waste acceptance criteria informed by up-to-date knowledge of contaminants of concern, and the provision of an appropriate buffer within the precinct.
 - ...
 - X. Discharges of hazardous air pollutants from vehicles accessing the precinct shall be minimised, including by prioritising the use of rail or zero-emission transport.
 - ...

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
General		
(AX)	<u>Activities sensitive to air discharges</u>	<u>NC</u>
...		

...

I617.6 Standards

I617.6.1 Restricted Discretionary Standards

Activities listed as restricted discretionary activities in Table I617.4.1 must comply with the following restricted discretionary activity standards.

1. The discharge must be associated with an existing, legally authorised landfill or ancillary activity.
...
4. There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of a ~~suitably qualified~~ an enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
...

I617.6.2 Discretionary Standards

3. There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of a ~~suitably qualified~~ an enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
...

I617.8 Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

1. For discharge of contaminants into air from all restricted discretionary activities (A6):
...

f. previous complaint history:
...

11.13. Noise

Application

495. The private plan change request does not directly address noise effects as the proposed precinct provisions do not authorise the establishment and operational noise effects of a potential landfill. Any noise effects would continue to be assessed using the underlying Auckland-wide provisions in *Chapter E25 - Noise and vibration* of the Unitary Plan.
496. The private plan change request includes an Assessment of Environmental Noise Effects Report (Technical Report L) which covers the noise effects arising from the construction and operation of the landfill under the relevant noise and vibration standards of E25, including the maximum permitted noise levels for noise generated and received between sites in the Rural Production Zone. This report was prepared primarily to inform the related resource consent application.
497. The Assessment of Environmental Noise Effects Report does not discuss or propose an alternative noise framework for the proposed precinct and states that the Unitary Plan E25 noise limits "are reasonable and would provide acceptable noise controls for a project of this nature." The applicant recommends that these Auckland-wide provisions be used as the basis for the assessment for any resource consent application under the precinct provisions.

Peer review

498. Jon Styles, a Director and Principal Acoustic and Vibration Consultant at Styles Group, has reviewed (for the council) the noise issues associated with the proposed precinct. A memo from Mr Styles is included in **Attachment 5** of this report.
499. Mr Styles clarifies that the purpose of his review is not to assess the noise and vibration effects arising from the operation of a new or altered landfill, as these are assessed in the related resource consent applications. Rather, his review is to determine whether the proposed precinct provisions provide a robust framework for the control and assessment of noise and vibration effects from landfill activities within the precinct (should PC42 be approved).
500. Mr Styles confirms that the proposed precinct provisions do not specifically cover noise effects through objectives, policies, or rules. This does not mean that noise effects are not covered. As outlined in section 6.1 of this report, where a precinct is silent on a matter the underlying zone, Auckland-wide, and overlay provisions apply. In this case, the mechanism by which noise and vibration effects from within the precinct will be managed and assessed is primarily *Chapter E25 – Noise and Vibration* of the Unitary Plan.
501. Mr Styles considers the existing objectives and policies related to noise (contained within E25 and *Chapter H19 – Rural Zones*) to be comprehensive and robust. He does not consider that additional objectives and policies specific to noise effects are necessary in the proposed precinct.
502. However, Mr Styles does raise a small concern around Objective 2 of the proposed precinct. He considers there is a risk that noise effects (as they may affect human health) may be interpreted as falling under the scope of this objective. This could result in the objectives and policies relating to amenity/protection of receivers from unreasonable levels of noise being disregarded, unless the noise effects are of a level demonstrated to result in adverse health effects.
503. In light of this, Mr Styles recommends that Objective 2 be amended to ensure that there is no interpretation that could elevate this objective to prevail over the relevant amenity objectives within H19 and E25 that relate to noise effects on receivers.
504. In terms of noise effects within the precinct, Mr Styles notes that Table 1617.4 does not preclude Activities Sensitive to Noise (as defined in Chapter J1) within the precinct. The Rural Production zone provisions permit these activities (in various forms). Mr Styles considers that noise sensitive activities are very likely to be incompatible with activities provided for in the precinct and should be discouraged. He recommends this could be achieved by applying a non-complying activity status to Activities Sensitive to Noise in the precinct activity table.

Comment

505. I agree with Styles' conclusion that the proposed precinct provisions do not specifically cover noise effects through objectives, policies, or rules. Rather, E25 and H19 of the underlying Auckland-wide and zone provisions would apply (and overlays where they apply to the site).
506. I consider that the substantial size of the precinct and the isolated nature of Sub-precinct A⁸² (where a potential landfill would be located) means that the location of the

⁸² Refer to Figure 17 in section 11.18 of this report.

proposed precinct is suitable when considering potential noise effects outside the precinct. I acknowledge that not all noise producing activities would necessarily occur inside Sub-precinct A⁸³, but I consider that such effects can be adequately assessed using the underlying Auckland-wide and zone provisions. I agree with Mr Styles that there is no reason to add specific noise provisions to the proposed precinct.

507. While I understand and agree with Mr Styles' concern around the potential for the misinterpretation of Objective 2, I consider there is a more efficient and effective way to deal with this (and other potential misinterpretations). This would be to amend the proposed precinct wording at end of the objectives and policies sections to specifically refer to any exclusions to the underlying overlay, Auckland-wide, and zone objectives and policies. This would make it clear that the objectives and policies in E25 and H19 apply to the precinct unless explicitly excluded by the precinct text.
508. I agree with Mr Styles that to avoid any future issues around noise sensitive activities locating within the precinct (i.e. if WMNZ were to sell of parts of the land), that activities sensitive to noise⁸⁴ be a non-complying activity within the precinct.
509. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.2 Objectives

...

~~The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, except where there is a conflict, in which case these objectives take precedence.~~

In addition to the objectives specified above, all relevant overlay, Auckland-wide and zone objectives apply in this precinct:

...

I617.3 Policies

...

~~The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4).~~

In addition to the policies specified above, all relevant overlay, Auckland-wide and zone policies apply in this precinct - with the exception of the following:

- E13.3(4)
- ...

...

Table I617.4.1 Activity Table

Activity		Activity status
General		
<u>(Ax)</u>	<u>Activities sensitive to noise</u>	<u>NC</u>

⁸³ For example, a bin exchange area is likely to be located closer to the precinct boundary.

⁸⁴ Defined in Chapter J of the Unitary Plan as meaning: "Any dwelling, visitor accommodation, boarding house, marae, papakāinga, integrated residential development, retirement village, supported residential care, care centres, lecture theatres in tertiary education facilities, classrooms in education facilities and healthcare facilities with an overnight stay facility."

...		
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11.14. Health risk

Application

510. The applicant addresses the effects of PC42 on human health through section 4.5 on Air quality and through a Risk Management Assessment Report, a Human Health Risk Assessment Report, and a Hydrogeological Assessment report (Technical Reports S, T and E).
511. The health report discusses the issues associated with a landfill including leachate, landfill gas, surface water, dust and their receptor pathways. It concludes the key sources of contaminants to be:
- leachate potentially seeping through a landfill lining system and the underlying soils into deeper regional groundwater, and/or into the site stormwater system through leachate breakout on a landfill face to surface water;
 - landfill gas in the form of fugitive or partially combusted landfill gas.
512. The health report indicates that there is the potential for leachate breakout through lower permeability waste and/or in event of a long period of heavy rain. The maximum volume of leachate discharged from the site into surface water through breakout is calculated as 5 L/day in a worst-case scenario.
513. The Risk Management Assessment identifies several scenarios that could give rise to unplanned discharge and the below events are assessed as having a 'moderate' residual risk when controls are implemented.
- lining system failing due to differential settlement, earthquake or other mechanism
 - discharge of contaminated stormwater if stormwater pipe or swales fail/block, up-catchment stormwater cannot discharge, and dammed water accumulates resulting in interaction with waste, creating leachate
 - air emissions associated with sub-surface landfill fire
 - waste acceptance criteria not met and hazardous waste received, resulting in higher levels of contaminants in leachate or discharges to air
514. The report considers that the risks around these events with controls implemented is tolerable.
515. The health report states that exposure to contaminants in the event of a significant unplanned release would be short term and could be mitigated by temporary measures such as evacuation or restrictions on collecting food from surface water.
516. The health report also considers that dust emissions from placement of contaminated material at the working face would be negligible beyond the immediate working area by implementation of well-established controls such as application of water, rapid mixing and cover with other waste materials as well as pre-acceptance checks to avoid dusty waste. Furthermore, it considers that exposure to contaminants in dust is very unlikely to cause off-site effects.
517. The applicant's Hydrogeological Assessment report (Technical Report E) identifies 17 consented bores within 5km of the centre of Valley 1 (Sub-precinct A), which are indicated for domestic/municipal, stock and irrigation water supplies. It shows that the

consented surface water takes in the surrounding area were largely from the Hōteio River, primarily for agricultural purposes, and in particular for irrigation.

518. The applicant's Hydrogeological Assessment specifically addresses and analyses the risk of potential leachate seepage causing human health effects from the eating of fish from the Kaipara Harbour. The report evaluated six potential points of exposure to contaminants and it found that the closest point of exposure (#1 immediately downstream from the landfill footprint) represented the worst-case contaminant scenario for where food might be collected from the stream for human consumption.
519. Based on this, the report infers that this location could be used to measure the risk of the consumption of food (fish or watercress) from further downstream on the Hōteio River and also the Kaipara Harbour. This is because contaminant concentrations would be many orders of magnitude lower downstream due to dilution.
520. The report predicts that contaminant concentrations at all six potential points of exposure would not exceed the relevant health guidelines. It therefore concludes that the potential seepage of leachate through the landfill lining system was highly unlikely to have any adverse effects on the Hōteio River, the Waiteraire Stream, the groundwater users of the farm bore, [or by extrapolation the Kaipara Harbour].
521. The applicant's reports indicate that ingestion of home-grown produce from a vegetable garden subject to aerial deposition of contaminants and irrigation using surface water is the most sensitive exposure pathway ('route to causing sickness') rather than the breathing in of airborne contaminants or the contamination of roof drinking water supply.
522. In summary, the applicant's health report concludes that the human health risk levels are low and include a wide margin of safety. In addition, the risk assessment results represent the worst-case scenarios.

Peer review

523. The applicant's assessment of the effects of PC42 on human health has been reviewed for the council by Sharon Tang, a Senior Specialist within the Auckland Council's Resource Consents Specialist Input Unit. A memo from Ms Tang is included in **Attachment 5** of this report.
524. Ms Tang notes that the proposed precinct location at Wayby Valley is considered very sensitive in terms of human use of the regional aquifer, the Hōteio River, and the Kaipara Harbour for drinking water supply, irrigation, food collection and recreation.
525. In terms of site selection, Ms Tang notes that further health risk/impact assessment information is required to address the various issues around the site's suitability and she suggests that this could be provided by the applicant in its evidence for the hearing.
526. As the predicted recharge rate from shallow groundwater to the deeper Regional Aquifer is low (1%), coupled with the modelled low contaminant concentrations in groundwater when increasing leachate concentrations by three orders in modelling input, Ms Tang concurs with the applicant that a potential landfill in the proposed precinct is unlikely to have a long-term adverse effect on the regional aquifer (and therefore human health).
527. However, she has noted the assessment from council's Hydrogeology specialist, Mr Perwick, who suggests that the groundwater travel times between the upper aquifer

zone and the deeper regional aquifer zone may be significantly more rapid than accounted for. Mr Perwick also suggests that the flow direction in the regional aquifer from the area beneath the proposed landfill footprint is likely to be in a more south-westerly direction and towards the Waiteraire Stream. This raises some uncertainties on the modelling outcomes and whether the receptors assessed in the HHRA are representative.

528. Overall though, Ms Tang generally agrees with the applicant's conclusion that the long-term cumulative health risks of a potential landfill in the proposed precinct on the residents, food collectors, and on contact recreation are acceptable by a wide margin.
529. As the predicted recharge rate from shallow groundwater to the deeper Regional Aquifer is low (1%), coupled with the modelled low contaminant concentrations in groundwater when increasing leachate concentrations by three orders in modelling input, Ms Tang concurs with the applicant that a potential landfill in the proposed precinct is unlikely to have a long-term adverse effect on the regional aquifer (and therefore human health). She agrees with the applicant's conclusion that the long-term cumulative health risks of a potential landfill in the proposed precinct on the residents, food collectors, and on contact recreation are acceptable by a wide margin.
530. However, Ms Tang goes on to say that there is a lack of understanding of short-term effects on the regional aquifer from unplanned contaminant releases as a result of a stormwater system failure or a lining system failure. She states that a human health risk assessment should not only address long-term health effects of a proposal, but also short-term effects of the potential exposure to high contaminant concentrations, such as during an unplanned discharge event.
531. Although these events have a low probability of occurrence, they have potentially high health consequences and Ms Tang believes that further evaluations based on information from existing landfill facilities or further monitoring data would ensure any decision is made based on sufficient evidence. Because of this, Ms Tang currently considers that overall, the health effects from the proposed precinct are unable to be determined.
532. If PC42 is approved, Ms Tang notes a number of amendments to the precinct she considers are necessary. While the precinct covers a very large 1,020ha site, it means the effects assessment is based on a large buffer (more than 1km) to the nearest surrounding sensitive land use. However, Ms Tang observes that there are no proposed provisions within the precinct to secure the buffer – both to protect neighbouring properties and to protect the precinct itself from any future reverse sensitivity issues.
533. Therefore, Ms Tang recommends that any new landfill within the precinct (outside Sub-precinct A) that is closer than 1km to the precinct boundary is prevented. Ms Tang also recommends that the precinct introduce provisions to avoid sensitive activities locating within the precinct.
534. Ms Tang considers that the proposed precinct provisions consider adverse effects on human health individually, and do not address any potential cumulative effects from air, land, water contamination potentially arising from multiple activities occurring within the precinct. Due to the nature of landfill activities and the potential creation of multiple sources of contaminants, Ms Tang seeks that a holistic risk assessment and management approach undertaken to achieve the purpose of the RMA and to be in

line with the NPS:FM. Therefore, Ms Tang recommends changes to Policy 3 to address these concerns.

Comment

535. I generally agree with Ms Tang's review of the applicant's assessment of health risks. WMNZ has been able to demonstrate that the long-term health effects from a potential landfill in this location under PC42 are acceptable. However, the short-term effects from events such as an extreme weather event like a storm with high wind and heavy rain, does not seem to be well understood (due to the lack of evidence from existing landfill data). While the applicant's view is that the increased rainfall would dilute any contaminant, Ms Tang is of the view that the heavy rain could result in shorter detention times in stormwater devices (e.g. ponds) due to the high volume and speed that the rainwater would accumulate. This could mean that any contaminants carried with the stormwater are not able to separate out from the water in the stormwater device, as would normally occur.
536. I am of the view that the short-term health risk effects of events such as storms require further analysis. I would anticipate that WMNZ could cover this in their evidence at the hearing. Subject to that evidence being presented, I am of the view that the health risk effects of a potential landfill on this site can be adequately managed through various methods as outlined by the applicant.
537. I agree with Ms Tang that amendments to the proposed precinct policies are necessary to ensure that the potential effects on human health are fully assessed. However, to avoid the policies becoming too confusing I recommend adding a new policy into the precinct as well as some additions to the existing Policy 3.
538. I also support the recommendation of Ms Tang to prevent a landfill outside Sub-precinct A, but within the precinct, to be able to locate closer than 1km from the precinct boundary. One of the most advantageous factors the Wayby Valley site has as a location for a landfill is its large separation distances from other landowners (through the large buffer area). Such an advantage would be undermined should a landfill be able to establish close to the precinct boundary.
539. I support Ms Tang's recommendation that such an activity be prohibited. A prohibited activity is described in section A1.7.6 of the Unitary Plan as an activity that cannot be the subject of an application for resource consent. Activities are classed as prohibited where they are expected to cause significant adverse effects on the environment which cannot be avoided, remedied or mitigated by conditions of consent or otherwise where it may be appropriate to adopt a precautionary approach. Any proposal for a prohibited activity must first be the subject of a plan change to change the activity status (either generally or in respect of a particular proposal) to one of the other classes of activity.
540. Finally, I also support Ms Tang's recommendation that Activities sensitive to air discharges, Activities sensitive to noise, and Activities sensitive to hazardous facilities and infrastructure⁸⁵ be made a non-complying activity within the precinct. Without this activity status, the provisions of the underlying Rural Production zone would enable activities within the precinct that could hinder or compromise the establishment and operation of a potential landfill.

⁸⁵ Activities sensitive to air discharges, Activities sensitive to noise, and Activities sensitive to hazardous facilities and infrastructure are all defined terms in *Chapter J- Definitions* of the Unitary Plan.

541. The recommended changes to the precinct are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.3 Policies

- ...
3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
- ...
- X. the cumulative health effects from the air, land, and water.
- ...
- X. Human health effects from the establishment, operation, and aftercare of the landfill are avoided, minimised, or mitigated to an acceptable level.
- ...

Table I617.4.1 Activity Table

Activity		Activity status
New landfills		
<u>(AX)</u>	<u>New landfills outside Sub-Precinct A (but inside the Auckland Regional Landfill Precinct) that are within 1km of the Precinct boundary</u>	<u>PRO</u>
...		
General		
<u>(AX)</u>	<u>Activities sensitive to air discharges</u>	<u>NC</u>
<u>(AX)</u>	<u>Activities sensitive to hazardous facilities and infrastructure</u>	<u>NC</u>
<u>(AX)</u>	<u>Activities sensitive to noise</u>	<u>NC</u>
...		

11.15. Landscape and visual

Application

542. Section 2.3.7 of the private plan change request provides a description of the landscape and natural character of the precinct and its surrounds. The section relies on a Landscape and Visual Assessment Report (Technical Report H). The area of the proposed precinct is described as containing “environments and habitats with varying levels of naturalness, including plantation forestry, indigenous forest, pasture, wetlands and waterways”.
543. Section 4.10 of the private plan change request summarises the effects on landscape and visual amenity from the proposed Auckland Regional Landfill precinct. It states that the potential landfill would be located in a working landscape with ever-changing farming and forestry activities. It also notes that the actual design and operation of the landfill, which would be assessed in detail at the resource consent stage, would influence the visibility of the project. Specific measures such as the location of access, buildings and activities and opportunities for mitigation screen planting (for example) could be considered at that time.
544. The application concludes that the viewing audiences are likely to be limited and a significant distance away. This is because of the buffer provided by the precinct landholding extent and the relatively undeveloped nature of the rural land located beyond the precinct. It concludes that there are no potential landscape or visual effects related constraints or issues that would preclude these effects being considered and assessed through a later application for resource consents process.

545. It is noted that the applicant's assessment of landscape and visual amenity does not address cultural landscape effects. However, I understand that WMNZ has engaged with mana whenua to better understand the specific cultural landscape effects that have arisen through submissions. This information may be available through evidence at the hearing.

Peer review

546. The applicant's landscape and visual amenity assessment has been reviewed for the council by Peter Kensington, a consultant landscape architect. A memo from Mr Kensington is included in **Attachment 5** of this report.
547. Mr Kensington agrees with the applicant's assessment that the existing landscape and natural character of the proposed precinct area has varying levels of naturalness. He also agrees that a potential landfill within the precinct would be viewed in the context of a working rural landscape (e.g. with ongoing forestry clearance) with very few sensitive receivers (i.e. people living within dwellings on rural-lifestyle properties) that will help to ensure the overall integration of a potential landfill within the precinct (refer to Figure 17 in section 11.18 of this report).
548. Mr Kensington notes that any future landfill activities will be able to avoid locating within those areas that have a high landscape quality and/or are sensitive to change. He observes that the proposed precinct provisions would not enable any landfill activities within the Outstanding Natural Area of Dome Forest (ONL 32).
549. Mr Kensington considers that for many viewing audiences in the Wellsford township and environs, the potential landfill would not be visible. For those people viewing from the west that might be able to see the activity, the adverse visual effects will be moderate-low to low given the viewing distance and context.
550. However, he does accept that moderate adverse effects might be experienced by a limited number of viewing audiences around Davies Road. This is because the landfill activity may be visible directly in front of the Dome Summit. However, the effects may only be greatest during limited periods of time when uncapped fill is observable. I understand that WMNZ will provide evidence at the hearing of refined ZTV (Zone of Theoretical Visibility) mapping which will assist in an understanding of the location of these viewing audiences.
551. According to the applicant's landscape and visual amenity assessment and agreed by Mr Kensington, the greatest potential adverse visual effects from a potential landfill development within the precinct, would likely be on people viewing from within residential dwellings on three properties located adjacent to Springhill Farm. Mr Kensington notes that the adverse effects on these viewing audiences can be successfully mitigated by existing and proposed planting. I understand that the further mapping by WMNZ for the hearing will clearly identify the location of these existing dwellings.
552. Mr Kensington has also assessed that viewers travelling along State Highway 1 and the future motorway corridor, as transient viewing audiences, may experience fleeting views of activity associated with landfill operations, however this would primarily be activities similar in appearance to a rural earthworks activity.
553. Mr Kensington considers that the visual effects throughout the life of any future landfill activities on localised viewing audiences can be mitigated through design measures.

These measures could include the establishment of screen planting, revegetation, and hydroseeding. The progressive capping of the landfill and vegetation establishment will also contribute to integration post closure.

554. It is Mr Kensington's opinion that the final elevation of a capped landfill within 'Sub-precinct A' (based on the maximum airspace of the landfill of 28.5 Mm³) will reach a level that is appropriate within the context of the wider landscape. The maximum elevation of the completed landfill landform (without planting) will be RL200m⁸⁶, which will remain lower than the main defining 'Wilson Road Ridge' to the east and the 'Jackson Road Ridge' to the south. I understand that WMNZ will be providing further mapping which explains and illustrates this outcome, as part of their evidence for the hearing.
555. Mr Kensington cautions that he is unable to make an informed judgement on cultural landscape effects until further detail is provided. He understands that WMNZ has engaged with mana whenua to better understand the specific cultural landscape effects that may arise. Further information on this is anticipated in evidence at the hearing.
556. Mr Kensington recommends that an additional policy be included within the precinct wording to ensure the successful integration of future buildings and structures into the landscape (given the underlying zone provisions are less prescriptive in this requirement). In addition, Mr Kensington considers that a minor change to the precinct wording is necessary to strengthen the intent to avoid adverse effects from any future landfill activity on areas of identified Outstanding Natural Landscape within the proposed precinct. A further amendment to the precinct wording recommended by Mr Kensington is the requirement for any application for resource consents to be accompanied by a 'Landfill Management Plan'. Within this plan would sit an 'Ecological and Landscape Enhancement and Restoration Plan', covering landscape management initiatives to address actual and potential landscape and visual effects.
557. Mr Kensington concludes that, subject to the confirmation of cultural landscape effects and the adoption of the recommended precinct amendments above, he can support PC42 from a landscape and visual effects perspective.

Comment

558. I agree with Mr Kensington's review of the applicant's landscape and visual effects assessment. I consider that the low number of localised viewing audiences, in addition to the mitigating elements of viewing distance and the dynamic rural environment context for other viewers, mean that the any landscape and visual effects from a potential landfill could be adequately assessed and addressed at the resource consent stage.
559. I accept that Mr Kensington is currently unable to provide any advice on the potential cultural landscape effects without further understanding of this potential issue. I understand this information may be provided in evidence at the hearing to allow for informed consideration and further assessment.
560. I agree with the changes to the precinct as recommended by Mr Kensington as they will clarify a discrepancy between the standards of I617.6(1)/I617.6(2) and also clearly

⁸⁶ RL = Reduced Level (the height or elevation above the point adopted as the site datum for the purpose of establishing levels).

directing any future application for resource consents to prepare an all-encompassing Landfill Management Plan.

561. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.3 Policies [rp/dp]

...

X. Manage adverse effects of buildings and structures by:

(a) requiring buildings, structures and earthworks associated with access and building platforms, to be of a design, form, scale, density and location to ensure sensitive integration within the landscape and the retention of rural character and amenity values; and

(b) avoiding buildings and structures on ridgelines and ensure their profile does not visually protrude above the natural line of the ridge.

...

I617.6 Standards

I617.6(2) Discretionary Standards

4. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (except Sub-precinct B).

...

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

...

11.16. Historic heritage Application

562. Section 4.12 of the private plan change request addresses archaeology with reference to an Archaeological Assessment (Technical Report K). The report states that no archaeological sites are recorded on the property, and there is no evidence of potential

archaeological values within the proposed footprint of the project. In addition, due to the nature of the site soils and terrain, the report states that Māori archaeological sites or settler cottages are unlikely to be present.

563. The private plan change request states that any potential adverse effects on archaeology can be managed through the resource consent process and the Heritage New Zealand Act 2014.
564. The report does identify two early 20th century structures (a house and shed) “with some historic heritage value” on the Springhill Estate. The report concludes that if the early 20th century (or possibly older) structures are retained, no historic heritage effects are expected. The plan change request (section 2.3.10) states that no works are proposed in the vicinity of the cottage.
565. Although not explicitly addressed, it is apparent from the report that there are no potential areas of special character within the plan change area.
566. No assessment of mana whenua values is included within the report as these can only be assessed by mana whenua.

Peer review

567. The applicant’s heritage assessment has been reviewed for the council by Robert Brassey, a Principal Specialist Cultural Heritage within the Auckland Council’s Heritage Unit. A memo from Mr Brassey is included in **Attachment 5** of this report.
568. Mr Brassey concludes that the applicant has provided an archaeological assessment rather than a comprehensive assessment of effects on historic heritage. The methodology of the Archaeological Assessment only allowed for assessment of in-ground archaeological sites, rather than historic heritage as defined in the RMA (which includes historic sites, structures, places, areas and surroundings).
569. The assessment is inconclusive in regard to the age of the potential heritage buildings within the precinct, their historical associations, original function and their significance. There is also no assessment of any planted trees within the plan change area in relation to potential historic heritage value.
570. Mr Brassey notes that the council requested additional information addressing historic heritage within the plan change area as part of the RMA Clause 23 process. The applicant did not provide this information stating that “Development of a new landfill still needs consent under the proposed precinct provisions, so the opportunity exists to consider archaeology and heritage through this process.”
571. Mr Brassey recommends that the applicant either provide full assessment of historic heritage prior to/at the hearing, or that the precinct provisions be amended to require an assessment of historic heritage with the first application made for a new landfill or discharges from an existing landfill.

Comment

572. I agree with Mr Brassey’s review of the applicant’s heritage assessment. While it has covered in-ground archaeology, it has clearly not properly assessed other matters of historic heritage.
573. I endorse Mr Brassey’s statement that the “protection of significant historic heritage places that are not currently scheduled relies on such places being identified in areas

subject to plan changes during the assessment process, and then being added to the schedule.”

574. This statement aligns with section D17.1 – *Unscheduled historic heritage* of the Unitary Plan which states:

“Much of Auckland’s heritage has not been identified or evaluated to determine its significance. Some places that have been identified as having significant heritage values are not presently included in the historic heritage schedule, either because of incomplete information, lack of consultation with landowners, or for other reasons. Presently unscheduled historic heritage places that meet the criteria for scheduling will be evaluated for inclusion in the schedule through future plan change processes.”

575. The council does not have the resources to be able to undertake a comprehensive historic heritage assessment of every property in the region. Therefore, the council’s approach for identifying further items of previously unknown (or not fully assessed) historic heritage is for assessments to be undertaken as areas undergo transition and development.

576. In my view, the plan change stage is a logical time to undertake a full assessment of historic heritage, especially when the plan change involves a significant change to the land use.

577. Therefore, I recommend that, subject to the applicant providing further historic heritage assessment information prior to or at the hearing, the precinct provisions be amended (as outlined in Mr Brassey’s memo) to require an assessment of historic heritage with the first application made for a new landfill or discharges from an existing landfill.

578. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

...

1617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

1617.9.3 New Landfills and Discharges to air, land or water

(X) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of historic heritage is required which considers all of the historic heritage values identified in the Unitary Plan B5 policies, specifically in relation to the buildings, settings, and historic plantings within the precinct.

...

11.17. Economic Application

579. The private plan change request does not contain a specific section summarising the economic effects of the proposed precinct, but it does include an Assessment of economic effects (Technical Report I). That report is primarily related to the associated

application for resource consents to establish a landfill on the site. However, the report is a useful guide as to the potential economic effects from a potential landfill under the proposed Auckland Regional Landfill precinct.

580. The applicant's economic report focuses on the wider economic effects on parties other than WMNZ ("externalities"). The report summarises that the economic benefits of a potential landfill on the proposed precinct site would be:
- Increased employment⁸⁷, incomes and expenditure within the Warkworth/Wellsford area and retained employment, incomes and expenditure within Rodney, avoiding the counterfactual of lost investment, employment and expenditure in Rodney should Redvale not be replaced;
 - Reduced waste disposal transport costs for Auckland residents and businesses estimated to be \$14.5 million per annum in 2028, rising to \$16.5 million per annum in 2038. This is on the basis of a hypothetical alternative landfill site being 30 kilometres further north from Auckland's central business district;
 - Reduced road transport externality costs – i.e. reduced congestion, emissions and road accident costs;
 - Transport cost savings from local employment reducing the need for local residents to commute to and from other parts of Auckland for employment; and
 - Retained competition in Auckland's waste disposal market by developing a replacement landfill once Redvale is closed.
581. The economic report concludes that potential landfill would not lead to economic costs in the form of reduced alternative land uses, public infrastructure costs, or local road congestion costs. While a landfill has the potential to negatively affect some nearby local property values, such effects are a reflection of, not in addition to, any adverse effects for local residents identified in the reports of other technical experts. The economic report notes that the Environment Court has accepted that to include both adverse effects for local residents and property value effects would involve double counting⁸⁸.

Peer review

582. The applicant's economic assessment has been reviewed for the council by Shyamal Maharaj (Economist) and Shane Martin (Senior Economist) within the council's Chief Economist Unit. A memo from Mr Maharaj and Mr Martin ('the council economists') is included in **Attachment 5** of this report.
583. The council economists have several reservations about the applicant's economic evidence. They firstly note that the applicant uses an economic impact assessment ('EIA') methodology. The council economists consider that there are limitations in the applicant's economic analysis – primarily that an EIA does not help decide whether a course of action is appropriate or not.
584. They consider that the results would be more credible if a best-practice cost benefit analysis ('CBA') methodology was adopted. CBA methodology requires that non-financial or non-monetary effects be recognised as best as possible so they can be

⁸⁷ The economic report acknowledges that in the Auckland wide context these jobs are simple transfers of employment as an equivalent number of jobs will be lost with the closure of the Redvale Landfill, apart from a core crew of 10 to 15 who would remain at Redvale for several years for aftercare, maintenance and leachate and gas management.

⁸⁸ See for example, paragraphs 249 - 256 of: Environment Court in *Foot v Wellington City Council* ENE Wellington W73/98, 2 September 1998 which dealt with the impact of height restrictions on properties in Oriental Parade.

taken into account along with financial costs or benefits. The council economists also note that only direct economic effects should be counted in a standard best practice CBA, not indirect or induced impacts. Therefore, multipliers should not be used in the analysis, as this does not fit with international best practice for weighing up costs and benefits and is more an approach used for an EIA.

585. Specifically relating to employment, the council economists believe that there should be no net regional change in jobs (except from changes in how the landfill operates) given that the potential Wayby Valley landfill is ostensibly replacing the Redvale landfill. In their view, it is likely more automation rather than less would be adopted in a brand-new landfill, and therefore it seems unlikely that new additional jobs would be added.
586. The council economists also raise issues with the site selection process, in that there is limited information on the evaluation of alternative sites and where they are located. In their view, given that any landfill will have some level of environmental, financial, and social costs, the issue of whether the proposed Wayby Valley site will minimise these costs compared to alternative sites is important and is not transparently demonstrated by the applicant.

Comment

587. There is a fundamental difference in what the council economists and the applicant consider is an adequate economic assessment tool. Essentially, the applicant has submitted an EIA whereas the council economists consider that a CBA provides a more credible analysis.
588. While I can understand both perspectives on this, I consider that the purpose of an economic assessment is not to take the place of the planner's overall judgement on PC42 that considers all of the environmental effects, the statutory requirements, and the submitter's concerns.
589. I consider that a CBA is a decision-making tool in and of itself. It calculates all the benefits of a proposal and then subtracts the costs associated with that proposal. It attempts to assign a dollar value to all the costs and benefits, including the difficult to monetise ones such as stream loss, air pollution, or scenic views. A CBA results in a number to show whether the benefits outweigh the costs.
590. In contrast, an EIA is an *input* into the wider decision-making process. It provides an assessment of the economic impacts of a potential landfill at Wayby Valley. It is one of many technical assessments that make up an AEE. In my view, an EIA is an appropriate tool to assist my analysis of PC42.
591. Putting the choice of analysis tool to one side, I consider that the overall economic / financial costs and benefits of a potential landfill under the proposed precinct are fairly neutral. In my view, the economic benefits seem overstated by WMNZ.
592. I agree with the council economists that there is unlikely to be any significant employment gains from a new landfill, as it is simply proposed to replace another one that will close. It is a similar case with the applicant's stated transport savings from local employment – people in Warkworth and Wellsford working at the landfill would get a shorter commute but this would be offset by those around Redvale who can no longer work at the nearby landfill (as it will close).
593. I am also sceptical about the applicant's statement that waste disposal transport costs and congestion/emissions/accident costs will be reduced. This is based on a

hypothetical alternative landfill site being 30km further north from Auckland's central business district. There does not seem to be any proper justification for their hypothetical location and therefore it could in fact be closer to Auckland. This would likely considerably change the outcome of the economic impact.

594. The issue of the hypothetical alternative landfill site relates back to the site selection process. I agree with the council economists that it is an important factor in considering a precinct over this site. The rationale for a precinct on this site is that it is suitable for a landfill. In my view, the applicant has demonstrated that the Wayby Valley site is suitable for a potential landfill (subject to a resource consent), but I am not able to say whether there are other more suitable sites. This is because the details of the site selection process (e.g. location of other sites, were the criteria applied correctly to other sites) are not available. It would be useful if WMNZ could present evidence at the hearing that offers more insight into the site selection process. However, I do note that the council's jurisdiction to consider alternative sites is limited as outlined in section 3.4.3 of this report.
595. I also am not convinced that the retention of competition in the waste disposal market is a significant economic benefit of the proposed precinct. That presumes that this site is the only possible replacement for Redvale. In my view, there are potentially other sites in Auckland (or just outside Auckland) that could be developed for a new landfill, either by WMNZ or another entity. With Redvale closing in 8 years, it would be logical that if the Wayby Valley landfill was not being proposed, another waste disposal facility would emerge to meet the market demand for the disposal of waste. In essence, I consider that competition in the waste disposal market is not fundamentally under risk should the Wayby Valley proposal not proceed. It would be replaced by another proposal that will then retain competition in the market.
596. I generally agree with the economic costs outlined in the applicant's economic report in that they are all relatively minor. I agree with the applicant that effects on property values cannot be considered. However, in my view a significant potential economic cost would be related to a potential failure in the landfill systems resulting in the pollution of the waterways network. This could lead to significant economic disruption and damage to industries such as fishing and tourism, in addition to ecological, cultural, and social costs.
597. In light of this, I consider that the precinct provisions should include a new policy to require a resource consent application for a landfill (and discharges) to have a bond registered should there be any failure in the landfill systems resulting in adverse environmental effects, and for the aftercare of a potential landfill. While the probability of failure is low (based on the mitigation measures and operational requirements), the impact could be high. Therefore, I consider that the risk should be borne by the developer/operator of the landfill. While I acknowledge that bond conditions are standard practice for a landfill resource consent, I consider that this policy would assist the council should there be any dispute about a bond requirement.
598. The recommended changes are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.

I617.3 Policies

...

- X. Require new landfills and landfill discharge consents to include a condition requiring the applicant to maintain a cash (or equivalent) bond in favour of the council and drawn in terms

satisfactory to the holder to provide security for early closure, environmental remediation, and post-closure aftercare.

11.18. Positive effects

Application

599. Section 4.2 of the private plan change request covers the positive effects of PC42. The applicant states that the establishment of the Auckland Regional Landfill precinct on the site is considered to result in positive effects and benefits, beyond what is provided by the existing provisions of the Unitary Plan that apply to the site currently. The applicant considers the positive effects of PC42 to be around better managing reverse sensitivity effects and enabling regionally significant infrastructure.
600. In terms of managing reverse sensitivity, WMNZ has secured a large area of land for the precinct, which will enable a large buffer to surround the landfill, which will to a large extent manage reverse sensitivity effects where possible. In addition, by showing the precinct on the Unitary Plan maps and acknowledging its presence, future landowners will be able to make informed decisions about potential land uses and development. This is likely to positively contribute to managing reverse sensitivity effects.
601. In terms of enabling regional infrastructure, the applicant states that municipal landfills are a vital piece of regional infrastructure. The Auckland Regional Landfill will provide a regional contained and controlled location for disposal of residual waste which has not been diverted or recycled. In the absence of a controlled disposal location for containment of waste, there would be potentially significant adverse environmental and economic effects associated with uncontrolled waste. The applicant notes that by removing the non-complying status and introducing supportive objectives and policies, the precinct will enable a full merits assessment of a proposed landfill development through the resource consent process. In addition, the restricted discretionary activity status for re-consenting discharges will provide more certainty and efficiency for the ongoing operation of regionally significant infrastructure.

Comment

602. I generally agree with the applicant's assessment of positive effects. In terms of managing reverse sensitivity, it is clear that a landfill can generate effects beyond its footprint that can have effects on nearby neighbours. Such effects can include noise, odour, air discharges, and visual effects.
603. These effects are covered more specifically in other sections of this report, however I consider that the area of the proposed precinct enables a large buffer that enables potential issues with sensitive activities to be better managed.
604. In my view, the characterisation of this as a reverse sensitivity issue is not entirely correct. Reverse sensitivity is where *new* sensitive land users object to *existing* activities in a given location. The vulnerability of the *existing* user to the legal objections of the *new* sensitive users is described as 'reverse sensitivity'. In this case, the situation is flipped around, and the *existing* activities are sensitive (rural dwellings) and the potential landfill is the *new* activity.
605. In any case, I do consider that there are positive effects from the large buffer around the proposed precinct in managing effects on existing sensitive activities.
606. I also acknowledge that the precinct would have benefits if a landfill was established and then a new sensitive activity sought to locate in the vicinity. The precinct would

alert existing and new landowners in the area about the landfill activity, possibly dissuading them from establishing sensitive activities near the precinct. Through the modifications to the precinct recommended in other sections of this report, the precinct would also avoid new sensitive activities establishing within the precinct. The precinct would then have a positive effect in managing reverse sensitivity.

607. The map below in Figure 17 identifies Sub-precinct A (the potential landfill location) and the full precinct area. The map also shows rings of 1km, 1.5km, and 2km buffers around Sub-precinct A and identifies all the buildings in the vicinity. Note that the map shows all buildings including farm buildings (e.g. barns), and not just residential buildings.
608. As can be seen in Figure 17 below, there are very few buildings in the vicinity of the proposed precinct. The map shows that there are currently no sensitive activities within 1km of Sub-precinct A (the one building within 1km is a barn). This is consistent with the 1km separation distance recommended for landfills to minimise odour nuisance by a guidance document prepared for Auckland Council - *Separation distances for industry*⁸⁹. Even beyond the 2km buffer there are very few dwellings around the precinct, with most being clustered to the north west, on the southern fringes of Wellsford.
609. There are 13 sensitive activities (i.e. dwellings) within a 1.5km buffer of Sub-precinct A and a further 14 sensitive activities within 2km⁹⁰. In addition, the land within the precinct is not flat and therefore nearly all the surrounding land is visually separated from Sub-precinct A. In my view, I consider that the proposed precinct would result in positive benefits in terms of managing effects on sensitive users in the vicinity of the potential landfill site and on potential future reverse sensitivity issues (should a landfill be established).

⁸⁹ Emission Impossible (2012); included as Appendix 3.45.2 of the Auckland Unitary Plan's Section 32 Report

⁹⁰ Building use is based on a visual assessment of aerial photos.

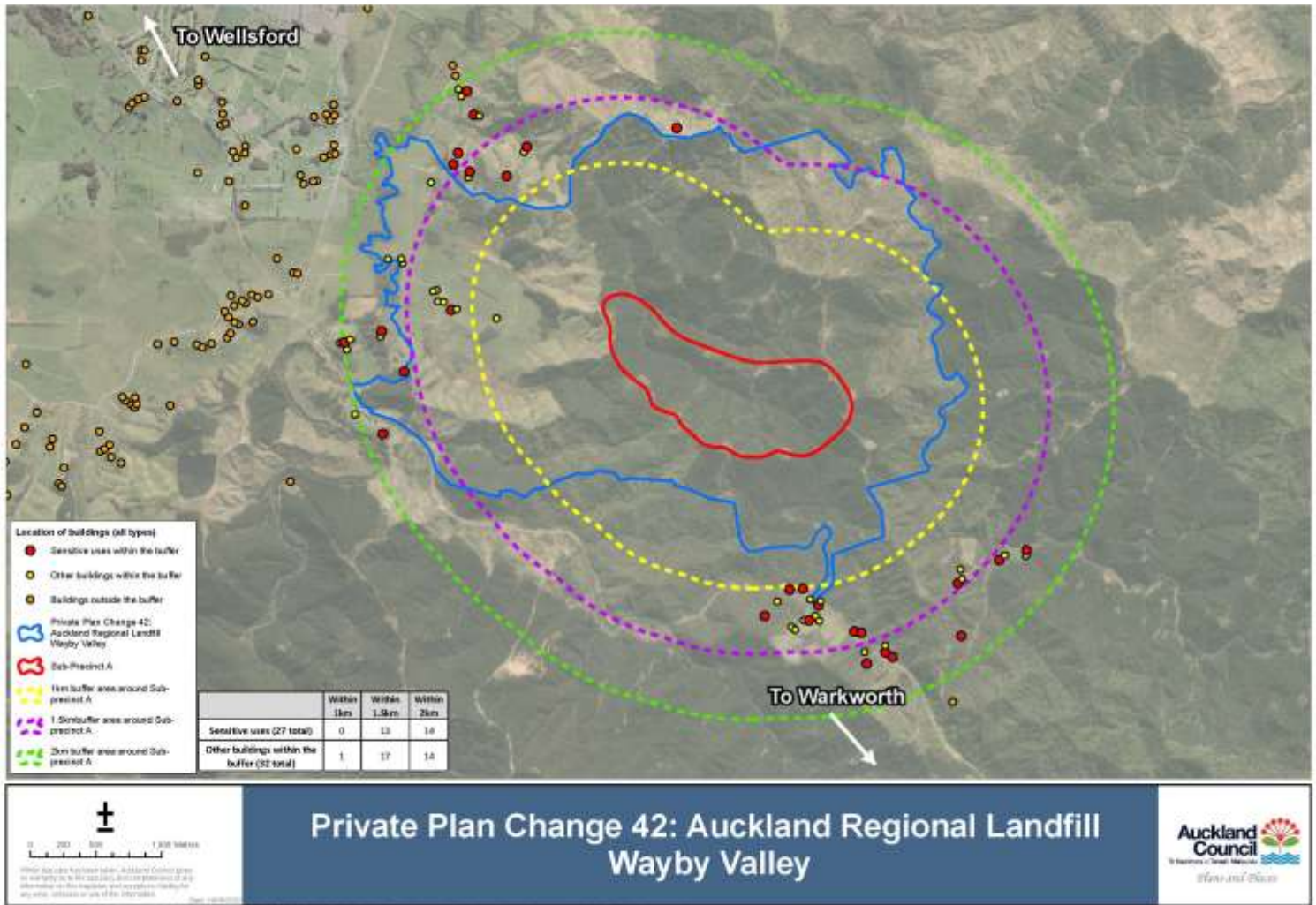


Figure 17 - Map showing buildings within 1km, 1.5km, and 2km buffers around Sub-precinct A

610. I note that for the proposed precinct to effectively provide a buffer and manage effects on nearby sensitive activities, there can be no new sensitive activities establish within the precinct area itself. WMNZ has stated in their application that it is in their interests to protect their buffer into the future. If any land within the precinct was to be sold, WMNZ would require a covenant to be placed upon the title, as well as an easement relating to the generation of nuisance effects.
611. In my view, additional precinct provisions are required to give certainty that new sensitive activities located within the precinct are avoided. While at this point in time it would seem unlikely that WMNZ would choose to sell parcels of land within the precinct, circumstances can change, and it is not outside the realms of possibility.
612. In my view Activities sensitive to air discharges, Activities sensitive to noise, and Activities sensitive to hazardous facilities and infrastructure should be non-complying within the precinct in addition to amendments to the objectives and policies to avoid sensitive activities establishing within the precinct.
613. The applicant also states that a positive effect of the precinct is to enable regional infrastructure. I generally agree with the applicant that the precinct would assist in the

provision of infrastructure, which is an issue of regional significance⁹¹. I note that there is no definition of “regional infrastructure” in the Unitary Plan, but I agree that the potential Auckland Regional Landfill would (if established) provide infrastructure at a regional level.

614. I agree with the applicant that municipal landfills provide a sanitary and contained facility for the disposal of waste that cannot be reduced, reused, or recycled. Until the goal of zero waste is achieved, residual waste must be disposed of in a controlled manner.

12. CONSULTATION

615. Section 3.2 of the private plan change request outlines the consultation undertaken by WMNZ in preparing the private plan change and the related resource consent applications. This included consultation with neighbours, iwi groups, local community groups, infrastructure providers, Auckland Council, Auckland Regional Public Health Board, Department of Conservation, and the Walking Access Commission. Four public open days were held and a project website established.
616. Table 3.1 in the private plan change request summarises the feedback received from the public open day and communications with neighbours. The key themes were around the proposed location, alternative waste management technologies, flooding and instability hazards, and the value of native bush in the area.

12.1. Iwi and hapū

617. In late 2018 WMNZ sent a letter and email to all the iwi groups that have identified that they have an interest in the proposed precinct area. This letter notified them of the Overseas Investment Office approval to acquire the land for a landfill. In August 2019 WMNZ notified them of the lodgement of PC42. The iwi and hapū contacted were:
- Ngāti Whātua o Kaipara;
 - Ngāti Wai;
 - Ngāi Tai ki Tāmaki;
 - Ngāti Maru;
 - Ngāti Te Ata;
 - Ngāti Whātua Ōrākei;
 - Te Kawerau ā Maki;
 - Te Rūnanga o Ngāti Whātua;
 - Te Uri o Hau;
 - Ngāti Whanaunga;
 - Ngā Māunga Whakahii o Kaipara;
 - Ngāti Manuhiri;
 - Ngāti Rango;
 - Te Roroa
618. The applicant notes that some of these iwi groups have a particularly strong interest in the proposed precinct area. In particular, Ngāti Manuhiri, due to the project’s proximity to the Hōteu River, which is subject to a statutory acknowledgement in favour of Ngāti Manuhiri⁹². Ngāti Rango and Ngāti Whātua also have a significant interest in the area

⁹¹ B1.4(2) in the Unitary Plan.

⁹² Refer to *Appendix 21 – Treaty settlement legislation – Statutory Acknowledgements* of the Unitary Plan.

due to the proximity of their marae to the Hōteu River and their long association with the area and the Kaipara Harbour.

619. Over the course of the pre-lodgement period, WMNZ has engaged in public consultation with all potentially interested iwi groups and giving them opportunities to obtain information about the proposed landfill and related issues. As a result, WMNZ has received feedback from stakeholders covering a diverse range of topics.
620. WMNZ held initial meetings with Ngāti Manuhiri, Ngāti Rango and Ngāti Whātua o Kaipara, and Te Rūnanga o Ngāti Whātua to discuss the proposal in further detail. These meetings are covered in detail in sections 3.2.1.1 to 3.2.1.4 of the private plan change request (and in section 12.1 of this report). A number of site visits were held with different iwi to the Wayby Valley land as well as the Redvale landfill (in operation).
621. Section 3.2.1 of the private plan change request outlines what appears to be a high level of engagement from WMNZ to the relevant iwi. The emphasis from WMNZ is that it remains open for further discussions with iwi on the private plan change request.
622. At the time of lodgement (July 2019) one Cultural Values Assessment ('CVA') report was provided by Ngāti Manuhiri to WMNZ. The council has not seen a copy of this CVA.
623. Following notification of PC42, the council has received submissions on the private plan change request from the following iwi and hapū groups:
 - Environs Holding Ltd environmental subsidiary of Te Uri o Hau Settlement Trust (#35)
 - Ngāti Whātua Ōrākei (#45)
 - Te Rūnanga o Ngāti Whātua (#132)
 - Te Ohu Kaimoana (#143)
 - Ngā Māunga Whakahii o Kaipara Development Trust (#149)
 - Puatahi Marae (#361)
 - Tinopai Resource Management Unit (#398)
 - Ngāti Rango (#412)
624. Through submissions a number of groups have stated that the consultation for PC42 (and the related applications for resource consent) has been insufficient.
625. Te Uri o Hau Settlement Trust, Tinopai Resource Management Unit, Ngāti Whātua Ōrākei, and Te Rūnanga o Ngāti Whātua stated in their submissions that "Waste Management NZ Ltd and council have failed to undertake best practice consultation and engagement; resulting in inadequate information on cultural and other effects of the proposal. The proposal does not meet the expectations of the RPS for mana whenua engagement which includes providing opportunity for active participation, partnership and meaningful engagement..."
626. Te Ohu Kaimoana stated in their submission that the proposal "fails to address cultural impacts, given there's being a lack of meaningful consultation and engagement with Ngāti Whātua."
627. Ngā Māunga Whakahii o Kaipara Development Trust stated in their submission that "both WMNZ and Auckland Council have failed to undertake best practice consultation and engagement by seemingly being selective, based on favourability or not of initial feedback, in their engagement processes resulting in inadequate information on

cultural and other effects of the PPC42 request. This negates the Treaty imperatives and detracts from the intent of the RMA considering the responses of Manawhenua hapū, iwi in good faith.”

628. The exception to this theme was Ngāti Rango, as they stated in their submission that the “consultation and engagement has been ongoing and exemplary with an open-door policy that Ngāti Rango has really appreciated. It has ticked all the boxes from a cultural perspective.”
629. An assessment of cultural effects is included in section 11.1 of this report. All the submissions on PC42 from iwi groups and others raising cultural concerns are addressed in section 14.1.10 and 14.8 of this report.

12.2. Rodney Local Board

630. The applicant did not undertake any specific consultation with the Rodney Local Board. However, as part of the council’s processing of a private plan change, council planners sent a memo to the Rodney Local Board on 9 April 2020 outlining PC42 and the private plan change process. A report was prepared for the Rodney Local Board meeting of 19 August 2020. This report outlined PC42 in further detail, the themes from submissions received, and the local board’s role in the private plan change process.
631. The feedback from the Rodney Local Board was included in the minutes of the 19 August 2020 meeting (see **Attachment 7**). In summary, the Rodney Local Board:
- i) acknowledges that waste is produced by Aucklanders and should be managed and disposed of within Auckland to enable the sustainable management of the waste stream
 - ii) request that more effort is required within the overall industry to recycle and re-use waste rather than dispose of it to landfill
 - iii) believes that the applicant is in a good position to provide sustainable solutions to the disposal of waste due to their international experience in the management of waste streams and their many years of experience in the industry
 - iv) does not support the Proposed Plan Change 42 for landfilling activities in the proposed location as the Plan Change will enable activities which contribute to carbon emissions and climate change and will elevate climate risks
 - v) considers that the Plan Change has not met the objectives of Section E3.2 of the Auckland Unitary Plan that seeks that Auckland’s rivers and streams are restored, maintained or enhanced, and that reclamation of the beds of rivers and streams are avoided unless there are alternatives
 - vi) requests that the applicant consider alternative locations and alternative ways of preventing stream loss in this application
 - vii) note that Wayby Valley has always been known as an area of significant ecology due to its stony-bottomed streams which are the habitat of native Hochstetter frogs, which are highly endangered and are generally only found in this part of Rodney
 - viii) believe that the Plan Change is deficient in not considering avoidance of the destruction of the habitat of the threatened species, and that the proposed Precinct overlay for a landfill is inappropriate for this location

- ix) note that Waka Kotahi has recently designed and upgraded the intersection of State Highway 1 and Wayby Valley Road, and that this upgrade did not consider the additional heavy truck movements from this application
- x) believe that the intersection upgrade does not provide enough lanes now to cater for the additional truck movements and this will cause more than minor adverse traffic effects in this vicinity which cannot be mitigated
- xi) note that Waka Kotahi have advised that the intersection cannot be further upgraded in time to meet the needs of this application, and the applicant has not proposed an upgrade to this intersection at their own cost to alleviate these effects
- xii) request that Auckland Council planners thoroughly consider the significant number of submissions in opposition to the Proposed Plan Change 42 from affected parties in Rodney
- xiii) recommends that the application for the Proposed Plan Change 42 be declined based on the activity being inappropriate for the location, the ecology of the area, presence of threatened species in the area, and traffic issues, which will arise from activities associated with a Landfill Precinct overlay

632. A representative from the local board intends to speak to this feedback at the PC42 hearing beginning in November 2020.

13. NOTIFICATION AND SUBMISSIONS

13.1. Notification details

633. Details of the notification timeframes and number of submissions received is outlined below:

Date of public notification for submissions	26 March 2020
Closing date for submissions	26 May 2020 (submissions accepted up to 31 July following directions from the hearings panel and subject to s37 RMA assessment)
Number of submissions received	412
Date of public notification for further submissions	25 June, 20 August, and 4 September
Closing date for further submissions	9 July, 3 September, and 18 September
Number of further submissions received	11

14. CONSIDERATION OF AND RECOMMENDATIONS ON SUBMISSIONS

14.1. Submissions seeking that the plan change be declined

634. The following submissions seek that PC42 be declined in its entirety:

2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1,

83.1, 84.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1, 101.1, 102.1, 103.1, 104.1, 105.1, 106.1, 107.1, 108.1, 109.1, 110.1, 111.1, 112.1, 114.1, 115.1, 118.1, 119.1, 121.1, 122.1, 123.1, 124.1, 125.1, 126.1, 127.1, 128.1, 129.1, 130.1, 131.1, 132.1, 133.1, 135.1, 136.1, 137.1, 138.1, 140.1, 141.1, 142.1, 143.1, 144.1, 145.1, 146.1, 147.1, 148.1, 149.1, 150.1, 151.1, 152.1, 153.1, 154.1, 155.1, 156.1, 157.1, 158.1, 159.1, 161.1, 162.1, 163.1, 164.1, 165.1, 166.1, 167.1, 168.1, 169.1, 170.1, 171.1, 172.1, 173.1, 174.1, 175.1, 176.1, 177.1, 178.1, 179.1, 180.1, 181.1, 182.1, 183.1, 184.1, 185.1, 186.1, 187.1, 188.1, 189.1, 190.1, 191.1, 192.1, 193.1, 194.1, 195.1, 196.1, 197.1, 198.1, 199.1, 200.1, 201.1, 202.1, 203.1, 204.1, 205.1, 206.1, 207.1, 208.1, 209.1, 210.1, 211.1, 212.1, 213.1, 214.1, 215.1, 216.1, 217.1, 218.1, 219.1, 220.1, 221.1, 222.1, 223.1, 224.1, 225.1, 226.1, 227.1, 228.1, 229.1, 230.1, 231.1, 232.1, 233.1, 234.1, 235.1, 236.1, 237.1, 238.1, 239.1, 240.1, 241.1, 242.1, 243.1, 244.1, 245.1, 246.1, 247.1, 248.1, 249.1, 250.1, 251.1, 252.1, 253.1, 254.1, 255.1, 256.1, 257.1, 258.1, 259.1, 260.1, 261.1, 262.1, 263.1, 264.1, 265.1, 266.1, 267.1, 268.1, 269.1, 270.1, 271.1, 272.1, 273.1, 274.1, 275.1, 276.1, 277.1, 278.1, 279.1, 280.1, 281.1, 282.1, 283.1, 284.1, 285.1, 286.1, 287.1, 288.1, 289.1, 290.1, 291.1, 292.1, 293.1, 294.1, 295.1, 296.1, 297.1, 298.1, 299.1, 300.1, 301.1, 302.1, 303.1, 304.1, 305.1, 306.1, 307.1, 308.1, 309.1, 310.1, 311.1, 312.1, 313.1, 314.1, 315.1, 316.1, 317.1, 318.1, 319.1, 320.1, 321.1, 322.1, 323.1, 324.1, 325.1, 326.1, 327.1, 328.1, 329.1, 330.1, 331.1, 332.1, 333.1, 334.1, 335.1, 336.1, 337.1, 338.1, 339.1, 340.1, 341.1, 342.1, 343.1, 344.1, 345.1, 346.1, 347.1, 348.1, 349.1, 350.1, 351.1, 352.1, 353.1, 354.1, 355.1, 356.1, 357.1, 358.1, 360.1, 361.1, 362.1, 363.1, 364.1, 365.1, 366.1, 367.1, 368.1, 369.1, 370.1, 371.1, 372.1, 373.1, 374.1, 376.1, 378.1, 379.2, 380.1, 381.1, 382.1, 383.1, 384.1, 385.1, 386.1, 387.1, 388.1, 389.1, 390.1, 391.1, 392.1, 393.1, 394.1, 395.1, 396.1, 397.1, 398.1, 399.1, 400.1, 401.1, 402.1, 407.1, 408.1, 409.1, 410.1, 411.1, and 412.3.

Discussion

635. The majority of submission points on PC42 (393 out of 514) seek that PC42 be declined in its entirety. The reasons given to decline PC42 by submissions were varied and can be grouped as follows (with the most commonly mentioned themes first):

- Conflicts with sound resource management principles
- Conflicts with the Auckland Unitary Plan
- Conflicts with waste minimisation legislation and plans
- Alternative sites and/or waste management methods should be used instead
- Potential effects on waterways
- Potential effects on ecology
- Potential effects on transport
- Risks to the environment
- Potential effects on local amenity and human health
- Cultural effects
- Economic considerations
- Landscape, natural character, and visual effects
- Contribution to climate change
- Landfills should not be considered as infrastructure
- Other reasons for opposition

636. These reasons for seeking that PC42 be declined are each discussed in the following sections.

14.1.1. Conflicts with sound resource management principles

637. A high number of submissions included the following text or something similar:

“The proposal conflicts with sound resource management principles; the purpose and principles of the Resource Management Act 1991,…”

638. A number of submissions reproduced Part 2 of the RMA as well other sections. However, there was no detailed discussion as to why PC42 would conflict with sound resource management principles. I anticipate a number of submitters who provided generic statements on this matter will be able to flesh out their statements in evidence during the hearing.
639. The issue of whether PC42 was ‘sound resource management’ was addressed when the council made its clause 25 decision on the private plan change request. The council’s Clause 25 report said:

The term ‘sound resource management practice’ is not defined in the Act. The High Court in *Malory Corporation Limited v Rodney District Council* (CIV-2009-404-005572) where the issue on appeal was determining the correct interpretation of clause 25(4), considered this term in light of clause 25(4)(c) of Schedule 1 and stated:

“... the words “sound resource management practice” should, if they are to be given any coherent meaning, be tied to the Act’s purpose and principles. I agree too with the Court’s observation that the words should be limited to only a coarse scale merits assessment, and that a private plan change which does not accord with the Act’s purposes and principles will not cross the threshold for acceptance or adoption.”

Having undertaken a coarse merits assessment of the request documentation and the specialist reports, it is considered that the request is in accordance with sound resource management practice. The request should therefore be taken to the next stage which is to test the precinct proposal through the public submissions and hearings process.

It is clear from early publicity of the landfill proposal that a precinct for landfill is likely to be unpopular with many locals and some in the wider public due to the real or perceived environmental effects of the activity. There may be some people who question whether landfills have a legitimate role in the future of waste management and some may argue that potentially enabling a landfill through a precinct is not in accordance with sound resource management practice.

It is relevant to refer to Auckland Council’s Auckland Waste Management and Minimisation Plan (2018). This plan has a vision stating that “Auckland aspires to be Zero Waste by 2040, taking care of people and the environment, and turning waste into resources.”

‘Zero Waste’ is about “making the most of the resources we have, using them for their highest and best value, and sending nothing to landfill or to incinerators.”

However, the plan does stress that it is a journey to achieve Zero Waste, with a goal to reduce waste to landfill by 30% by 2027 and to zero by 2040. It is also acknowledged “it’s not yet technically or economically feasible to divert all materials from landfill”. The plan refers to “continuing to manage residual waste effectively and efficiently while progressively reducing Auckland’s reliance on landfills”.

The plan identifies landfill disposal as a poor waste management option, particularly in the context of managing organic wastes which decompose over time and release methane. Disposing residual waste is at the least preferred end of the waste hierarchy. However, while disposal to landfill is the least preferred method, the plan notes that “it is important Auckland continues to manage residual waste effectively for public and environmental health and safety reasons”.

The Auckland Waste Management and Minimisation Plan acknowledges that landfills will still have a role to play in the medium term until Auckland reaches the goal of Zero

Waste. This is especially so as it is still cheaper to send waste to landfill than to divert it into other productive uses (due to the currently low waste levy – set by central government). The plan includes a priority for the council to lobby the government to increase the waste levy.

The above discussion addresses the private plan change request for a new landfill precinct at a high-level along with the relevant council waste plan and the request is considered to be in accordance with sound resource management practice. It is therefore recommended that the council **not** reject the private plan change on the basis that it is not in accordance with sound resource management practice.

640. Based on the application material, advice from specialists, consideration of the statutory provisions, and the submissions, I am of the view that PC42 does not conflict with sound resource management principles.

14.1.2. Conflicts with the Auckland Unitary Plan

641. A high number of submissions included the following text or something similar:

“The proposal conflicts with...the Auckland Unitary Plan...” and “I object to one off bespoke objectives, policies and rules being applied to this site.”

642. These submissions did not include any detailed discussion as to why PC42 would conflict with the Auckland Unitary Plan. I anticipate a number of submitters who provided generic statements on this matter will be able to flesh out their statements in evidence during the hearing.

643. An earlier section of this report covers the Unitary Plan in detail and concludes that PC42 gives effect to the Regional Policy Statement (following some modifications to the wording). The proposed precinct provisions under PC42 also do not significantly depart from the policy direction of the regional or district plan.

644. In terms of the submissions that oppose ‘bespoke provisions’ being used, I can only assume that this is linked to the desire of the submitters for the proposed precinct to not be located on this site.

645. The use of a precinct for ‘bespoke provisions’ is a legitimate tool in the Unitary Plan to enable local differences to be recognised. An earlier section of this report includes further information on precincts and their role in the Unitary Plan. I note that the National Planning Standards⁹³ also enable the use of precincts for ‘bespoke provisions’ on particular sites where it is appropriate. Therefore, I do not consider that opposition to the use of bespoke provisions through a precinct is reason to decline PC42.

14.1.3. Conflicts with waste minimisation legislation and plans

646. Many submissions included the following text or something similar:

“The proposal conflicts with...the Waste Minimisation Act 2008 and the Auckland Council Waste Management and Minimisation Plan.”

⁹³ Page 49 of the National Planning Standards (November 2019) states “A precinct spatially identifies and manages an area where additional place-based provisions apply to modify or refine aspects of the policy approach or outcomes anticipated in the underlying zone(s). In combined plans with district plan and regional plan components, a precinct can be both seaward and landward of mean high water springs.”

647. Section 3.2 of this report addresses the Waste Minimisation Act (2008) and section 10.7.2 of this report addresses the Auckland Council Waste Management and Minimisation Plan (2018). In summary, I do not consider that the proposed Auckland Regional Landfill precinct conflicts with the waste minimisation plans initiatives above. Waste minimisation is a progression towards 'zero waste' and in the interim landfills will be required for the disposal of residual waste (that cannot be reduced, reused, or recycled) in a safe, sanitary, and contained manner.
648. Some submitters also referred to a range of other technical documents related to waste disposal listed below, stating that PC42 would conflict with these documents:
- Centre for Advanced Engineering: Landfill Guidelines – Towards sustainable waste management in New Zealand (2000)
 - Waste Management Institute New Zealand: Technical Guidelines for Disposal to land (2016)
 - Waste Management Institute New Zealand: Technical Guidelines for Disposal to land (2018)
 - Ministry for the Environment: Good practice guide for assessing and managing odour (2016)
 - Good Practice Guide for Assessing Discharges to Air from Industry (2016)
 - Ministry for the Environment: Guide for the Management of Closing and Closed Landfills in New Zealand (2001)
649. The first three documents on the above list cover the factors needing consideration in selecting a site for a landfill. I do note that the first two documents from 2000 and 2016 have been superseded by the 2018 version of the Technical Guidelines for Disposal to land by the Waste Management Institute New Zealand. WMNZ state in their application that their site selection process was consistent with these guidelines.
650. I also note that the guidelines do not require all criteria to be met to find the 'perfect' site. The assessment of the suitability of a site for a landfill becomes a balance of trade-offs. The guidelines state that in order to minimise future risk to the environment from landfilling activities, primary consideration should be given to key issues and potential fatal flaws with respect to geology, hydrogeology, surface hydrology and site stability. In light of the above, and the further discussion in section 3.4.2 of this report, I consider that WMNZ's site selection process was not contrary to, or in conflict with, the Technical Guidelines for Disposal to land by the Waste Management Institute New Zealand (2018).
651. The next two documents on the above list are good practice guides relating to odour and air discharges. As outlined in the memo from the council's Senior Specialist in the Contamination, Air & Noise Team (Mr Crimmins), the guidelines state that landfills involve air discharges, including odour, and therefore should be adequately separated from sensitive receptors, such as residential dwellings to minimise adverse effects.
652. The proposed precinct is located in a rural area (Rural Production zone), which the guidelines note as having a low population density, meaning there is a decreased risk of people being adversely affected by air discharges. In addition, the proposed precinct is surrounded by a significant area of forestry and native bush meaning there are few sensitive receptors near the precinct (particularly Sub-precinct A). The number and location of existing sensitive activities located around the proposed precinct is shown on Figure 17 of this report.

653. The memo from Mr Crimmins notes that the applicant’s analysis of odour complaints regarding the Redvale Landfill found that the most significant odour effects from that comparable landfill occur within 1km of the landfill footprint. I note that there are no sensitive activities within 1km of Sub-precinct A as shown on Figure 17 of this report. This is consistent with the 1km separation distance recommended for landfills to minimise odour nuisance by a guidance document prepared for Auckland Council - *Separation distances for industry*⁹⁴.
654. Therefore, I do not consider that the proposed precinct is in conflict with these good practice guides and in fact I would add that the proposed precinct already includes standards addressing odour that directly refer to the ‘Good Practice Guide for Assessing and Managing Odour’.
655. The final document on the above list is a guide for the management of closed landfills. I do not consider that the proposed precinct is in conflict with this document as I note that the precinct includes provisions around ‘aftercare’. These provisions are to ensure aftercare is properly considered and assessed in any resource consent to establish a landfill under the proposed precinct.

14.1.4. Alternative sites and/or waste management methods should be used instead

656. Many of the submitters seeking that PC42 be decline requested that the proposed landfill be replaced with another waste management option including more waste reduction, recycling, and composting. Another popular idea was that of a waste-to-energy plant, while some submitters sought that a more suitable site be found for the landfill.

657. Some examples of the comments from submitters on this issue are shown below:

“We need to be reducing waste, and not allowing rubbish dumping to be a business model where profit (in this case to an overseas owned company) is involved. This model will not encourage waste minimisation” (#8)

“Should we not be leaders and look at creating a facility to turn rubbish into fuel as they have done in Scandinavia and Tokyo.” (#21)

“I hope that no final decision will be made until a serious study of the alternatives is performed, with cost/benefit analysis of all aspects of the various possibilities...” (#90)

“NZ needs to look at other ways of disposing waste.” (#157)

“Find a remote location – not containing waterways, not in a high population development area, destroying our dwindling native forest OR develop a culture of waste recycling – build industry to generate energy from waste.” (#192)

“Other forms of waste disposal should be examined first. Landfill is a last and desperate solution?” (#233)

“Energy from waste plants are utilized throughout the pacific to divert waste from landfill. New Zealand is one of the last countries to recognize that a modern regulated energy from waste plant can be an asset to the country helping to displace any remaining fossil fuel energy generation and to form part of the overall energy (or heat) supply.” (#375)

⁹⁴ Emission Impossible (2012); included as Appendix 3.45.2 of the Auckland Unitary Plan’s Section 32 Report

“The city should encourage taking the opportunity to explore & prototype a new technology that eliminates methane emissions - instead of reverting back to a process that is hundreds, if not thousands of years old, that is outdated & should be banned because of landfills uncontrollable Global Warming emissions to atmosphere.” (#378)

“The proposal fails to address alternative methods and sites that result in more appropriate long-term outcomes for the region” (#398)

“I believe a world health forum will lobby to outlaw landfill use in the western world. We as the Green Islands should show by example that we can use all the advances of knowledge and ban the old fashion way of dumping waste into a hole and covering up” (#399)

“The Auckland Council need to investigate new technologies/strategies to reduce waste in the city and not just farm it out into the northern reaches of the district where the town dwellers can't see it.” (#409)

658. The issue of alternatives is covered in detail in section 3.4 of this report. This includes a high level discussion around alternative waste management options as well as alternative landfill sites. However, as noted in section 3.4 of this report, in processing PC42 under the RMA the council is limited in the range of alternatives it can require the applicant to pursue. Essentially, alternative waste management options (e.g. waste-to-energy plants) are not within the scope of council's recommendation on PC42. The council does not have the authority to recommend a different project to the one applied for.

14.1.5. Potential effects on waterways

659. The biggest concern in terms of potential environmental effects raised by the submitters seeking that PC42 be declined were those related to the waterways. This included groundwater/aquifers, local streams, the Hōteio River, and the Kaipara Harbour.

660. Some examples of the comments from submitters on this issue are shown below:

“We do not believe the area/site proposed is an appropriate or suitable location for a landfill to be constructed, given its...potential impact on the natural environment (including waterways)...” (#7)

“The Kaipara Harbour is the second largest harbour on Earth and is the Taonga of the Ngāti Whātua.” (#66)

“The Hōteio river is currently the fresh water supply for the town [Wellsford] and the wider region...The Hōteio travels into the Kaipara Harbour – an important area of significance...” (#104)

“If accepted, the proposed plan change would increase the risk of the discharge of contaminants into Te Awa Hoeto and Kaipara Moana. Kaipara Moana houses an important snapper nursery, numerous fish stock and is the food basket of Ngāti Whātua.” (#143)

“The proposed landfill site is unsuitable for the following reasons: 1. Proximity to Hōteio River...” (#235)

“We are trying to create a Waka Ama club and the proposed dump site will contaminate our waterways.” (#351)

“The reclamation of streams will result in the loss of habitat for the migratory fish which are found in these streams and upon which they depend for completing their complex life cycles.” (#394)

661. Specifically in terms of freshwater ecology, Mr Lowe (the Freshwater Ecologist for the council) considers the main issues raised in these submissions to be:
- Concerns regarding adverse effects of the freshwater environment, including loss of habitat, fauna and flora.
 - Requesting the protection of the existing freshwater ecological environment.
 - Concern regarding the magnitude of proposed stream loss.
 - Concerns regarding the application of the effect’s management hierarchy.
 - Concerns regarding the location of the proposed precinct with respect to freshwater ecological values.
 - Concerns regarding the proposed precinct being contrary to the NPS:FM and Unitary Plan and the risk of bypassing existing environmental regulations.
662. Mr Lowe notes that the majority of the above matters are covered in his memo (**Attachment 5**) including:
- Section 5.2: (The Plan Change Request relies on the site being an appropriate location for the activity)
 - Section 5.3: (Appropriateness of the proposed discretionary activity status for stream and wetland reclamation)
 - Section 5.5: (Appropriateness of objectives and policies relating to the effects management hierarchy).
 - Section 5.6: (Appropriateness and wording of policy 6 specifically)
663. Mr Lowe considers that the assessment of ecological values, ecological effects (including magnitude) and specific effects management package (avoidance, mitigation, offset and compensation measures) associated with a particular activity is more appropriately assessed as part of the resource consent application. However, he does acknowledge that the private plan change request material does signal the loss of over 15km of watercourse with either existing or potential high ecological values
664. Mr Lowe notes that the majority of submissions relating to the potential effects on waterways raised concerns, but did not make specific comments or requests relating to the provisions of the proposed precinct. Those that do are covered in section 14.9 of this report.
665. I agree with the comments of Mr Lowe above and in his memo in **Attachment 5**.
666. Specifically in terms of sedimentation issues, Ms Harte (the erosion and sediment control specialist for the council) notes that a number of submissions make specific reference to concerns regarding sedimentation effects to waterways and in some cases particular concern regarding the adverse effects from sedimentation to the Hōteio River and the Kaipara Harbour. In addition to these submissions, many additional submissions state general concern surrounding proximity to adjacent waterways (which discharge to the Hōteio River and ultimately the Kaipara Harbour), high rainfall, environmental impact, risk and pollution. Although not specified within these submissions, these comments could also be underpinned by a concern relating to sediment discharges.
667. Ms Harte states that earthworks for filling activities (cleanfills, managed fills and landfills) utilise sites with large gullies which generally contain steep slopes and watercourses, inherent to the natural topography. As such, any site proposed to situate

a landfill will likely contain adjacent watercourses which are sensitive to sediment discharges. Although Ms Harte acknowledges that an alternative site could be obtained to contain waterbodies with lower ecological values and located outside of the Hōteu and Kaipara Harbour catchment (which is preferable), it is her view that the site cannot be deemed unsuitable for earthworks activities at this stage. Determining whether the effects relating to sediment discharges will be significantly adverse or not, can only be determined when assessing proposed management and mitigation of effects for each specific proposal.

668. Ms Harte highlights that management of earthworks activities is a key consideration in determining whether significant adverse effects would be generated from a proposed earthworks activity in regard to the receiving environment specific to the proposal. There are best practice industry measures for earthworks where the implementation of erosion and sediment controls in addition to appropriate site management and monitoring techniques are employed to significantly minimise sediment discharges to the receiving environment. Staging and limiting exposed area is also a key consideration of any earthworks proposal. For the Auckland region, Ms Harte notes that the best practice erosion and sediment control refers to Auckland Council's Guidance document GD05⁹⁵. These measures and management techniques are a key part of assessing a resource consent application for earthworks including sediment discharges.
669. While Ms Harte considers the submitters' concerns regarding sediment discharges to adjacent watercourses and the Kaipara Harbour are valid, she believes that these concerns are best addressed as a resource consent matter as opposed to consideration during a plan change. Any application for resource consent must detail the potential adverse effects from proposed sediment discharges and detail to what extent they will be avoided, remedied, or mitigated through the design of specific onsite management techniques and controls which would be developed as part of a resource consent application. Only then can a determination be made on whether the potential adverse effects associated with sediment discharges will be more than minor significant in a particular proposal.
670. I agree with the above comments of Ms Harte regarding the submissions seeking that PC42 be declined in light of the potential effects on waterways.
671. I note that the potential effects on waterways – including local streams, the Hōteu River, the Kaipara Harbour, freshwater ecology, and groundwater/aquifers are addressed in some detail in sections 11.2, 11.4, 11.5, 11.6, and 11.7 in this report. Overall, these sections show that PC42 does not need to be declined due to the potential effects on waterways. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential effects on waterways are able to be considered during that process.

14.1.6. Potential effects on ecology

672. The submitters seeking that PC42 be declined also raised concerns with the potential effects on land based ecology (the forest, birds, and animals).
673. Some examples of the comments from submitters on this issue are shown below:

⁹⁵ *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* Guideline Document 2016/005 Incorporating Amendment 2 (June 2016)

“It is fundamentally abhorrent to consider the application for a plan change in the interests of installing a landfill in this significant ecological area...It will have significant adverse effects on...the area[’s]...delicate ecosystems,...the dependent vertebrate and invertebrate communities.” (#9)

“The forest on the site and neighbouring Department of Conservation reserve contains native and threatened flora and fauna. The area has significant natural features such as...old growth native forest which provides vital habitat for important rare species of native and/or threatened terrestrial...species” (#66)

“Concerns...[with] removal of habitat for native species of birds, animals, reptiles, frogs and flora/fauna.” (#82)

“I believe the landfill poses multiple high impact risks on the environment,...[and] due to nearby...native and threatened species and ecosystems...there appears to be a lack of regard in this submission for protecting the land and its people from the far-reaching and long-lasting impacts on landfills by this proposal.” (#171)

“There are a number of endangered species in the area.” (#235)

“Affect on sea birds scavenging and plastic in nests of our native birds.” (#399)

“Impact on the natural ecology of the area including rare species.” (#407)

674. The Terrestrial Ecologist for the council, Mr Chapman, considers the submissions seeking that PC42 be declined and raise the potential effects on ecology can be summarised broadly into the following themes:
- Concerns regarding adverse effects of the terrestrial environment, including loss of indigenous and threatened habitat, fauna, and flora.
 - Requesting the protection of the existing freshwater ecological environment (including wetlands).
 - Concern regarding the magnitude of the proposed stream and wetland loss
 - Concerns regarding the application of the effect’s management hierarchy.
 - Concerns regarding the proposed precinct being contrary to the NPS-Indigenous Biodiversity and Unitary Plan provisions
 - Concerns about the risk of bypassing existing environmental regulations.
 - Concerns regarding the location of the proposed precinct concerning terrestrial fauna, flora, and ecosystems
675. The terrestrial ecology matters raised in submissions have largely been covered in in Mr Chapman’s memo in **Attachment 5**, specifically:
- Section 2.1: (The Plan Change Request relies on the site being an appropriate location for the activity)
 - Section 2.2 (Appropriateness of the proposed discretionary activity status for wetland reclamation)
 - Section 2.4: (Appropriateness of objectives and policies relating to the effects management hierarchy).
 - Section 2.5 and 2.6: (Conflicts within the wording for significant ecological areas and effects and Appropriateness and wording of policy 6 specifically)
 - Section 2.8 (Environmental Effects on Indigenous Fauna and Flora)
676. I agree with the above comments of Mr Chapman (and those detailed in his memo) regarding the submissions seeking that PC42 be declined in light of the potential effects on ecology.

677. I note that the potential effects on ecology is addressed in section 11.3 in this report. Overall, these sections show that PC42 does not need to be declined due to the potential effects on waterways. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential effects on waterways are able to be considered during that process.

14.1.7. Potential effects on transport

678. A number of the submitters seeking that PC42 be declined also raised concerns around the potential effects on transport – notably travel times and safety on the SH1 section through Dome Valley.

679. Some examples of the comments from submitters on this issue are shown below:

“The Dome Valley road barely copes with traffic at the current level. Without extensive upgrading this road is poorly equipped to contend with a greater number of trucks” (#8)

“Driving and cycling on SH1 through the Dome Valley can be a frightening experience and will be made significantly worse with an additional 300 truck movements a day.” (#13)

“The possibility of 600 waste truck movements per day on an already difficult highway – SH1 – with a steep hill will cause severe restriction of traffic speed – is a recipe for more traffic accidents.” (#89)

“The proposal sees an increase of 44% in the heavy vehicle traffic in the Dome Valley section of SH1 which already has serious safety implications. Safety savings from these [NZTA] improvements is likely to be totally overwhelmed by the increase in heavy traffic.” (#124)

“I am also concerned about the impact on the community’s ability to enjoy the environment with a significant increase in heavy traffic...We have to use these roads to carry out our lives and businesses. The addition of 300-500 rubbish trucks a day in the Dome Valley will amplify what is already a dangerous and stressful travel experience for the local community.” (#126)

“Traffic/truck pollution on an already highly congested road with a high crash rate – insufficient condition for heavy transport.” (#192)

“The trucks will be problematic on a difficult highway.” (#234)

“Traffic danger in Dome Valley impacting on arterial route to Northland. Volume of traffic.” (#349)

“Submitter #396 expresses concern that there has been no investment in road improvements to cater for projected population, let alone the additional movements associated with the landfill activity.” (#396)

“...we have traffic problems continually and adding the large number of daily rubbish trucks would add to it greatly. Currently all freight to and from Northland is carried by road and the additional [traffic] will put too much pressure on the roads and motorists.” (#400)

“We have traffic problems continually and adding the large number of daily rubbish trucks would add to it greatly. Currently all freight to and from Northland is carried by road and the additional will put too much pressure on the roads and motorists.” (#410)

680. The Transportation Engineer for the council, Mr Black, considers the submissions seeking that PC42 be declined and that raise the potential effects on transport can be summarised broadly into the following themes:
- Traffic Volume/ Congestion
 - Road Safety issues.
 - Lack of consideration of Alternative Transport Methods
 - Road Maintenance issues
 - Traffic Movement Projections
 - Restricting Private Access
 - Opposition to PC42 due to Travel Costs
681. In terms of those submissions that seek that PC42 be declined due to the potential for traffic congestion, Mr Black notes that nearly all submitters highlighted the traffic congestion issue on the Dome Valley section of SH1 (between Kaipara Flats Road and Wayby Valley Road) and the concern that increased heavy vehicle movements related to the landfill activity will exacerbate this issue.
682. Mr Black has calculated the increase traffic from 2019 to 2028. In 2019 the Average Annual Daily Traffic recorded by NZTA was 14,877, with 9% heavy commercial vehicles. This equates to an estimated traffic of 19,400 and 1,748 heavy commercial vehicles in 2028 based on existing NZTA traffic data. The additional 520 waste truck movements per day is an increase of 29.7% in truck movements on SH1 (in the Dome Valley section between Kaipara Flats Road and Wayby Valley Road).
683. Mr Black notes that while this is a significant increase of heavy vehicles on SH1, the increase in total traffic is an average of 2.7% from heavy vehicles. Allowing for light vehicles accessing the landfill, the total increase on SH1 is 3.8%. Mr Black considers these increases in traffic are acceptable, as there is sufficient traffic capacity along SH1 to accommodate this increase in traffic – the existing SH1 has a link capacity of 1,500 vehicles per hour per lane.
684. In terms of those submissions that seek that PC42 be declined due to the potential for road safety issues, Mr Black notes that many submitters highlighted the existing crash record on the Dome Valley section of SH1 (between Kaipara Flats Road and Wayby Valley Road) and the potential for increased heavy vehicle movements to exacerbate safety issues.
685. However, Mr Black agrees with those conclusions made in the applicant's ITA and the Clause 23 (and Section 92) responses. In Mr Black's view, the proposed NZTA safety improvements along the Dome Valley will improve road safety along the corridor and the effects of landfill related traffic are unlikely to adversely affect the road safety along the corridor. The Dome Valley safety improvements also include wider shoulders on the uphill rise to summit at Dome Valley. This will allow heavy trucks including landfill trucks to travel within the wide shoulder and allow faster vehicles to pass these trucks and remain within the traffic lane.
686. In terms of those submissions that seek that PC42 be declined due to the lack of consideration of alternative transport methods, Mr Black agrees that the use of alternative transport methods has not been covered adequately.
687. Mr Black is of the view that the use of electric vehicles for the movement of waste to the site is not yet technically feasible however could be technically feasible by 2028.

He believes that the haulage of waste and operational activities within the landfill would naturally move to electric vehicles when economically viable.

688. However, Mr Black considers that waste by rail may offer a viable alternative considering the main railway line passes close to State highway to the south of Wellsford, approximately 2.5km west of the site and continues to the travel through Wellsford to the east of the town centre past the Wellsford Train Station.
689. This would require a separate spur or branch line adding to the railway land adjacent to the Wellsford Train Station. However, this would require trucks to travel through Wellsford via Centennial Park Road and SH1 to access the landfill. Alternatively, a new spur facility to the south of Wellsford could be provided to remove truck movements from Wellsford, however this would likely have to be located within private property.
690. Mr Blacks also notes that a facility would be required in Auckland for the loading of waste onto trains and a suitable location would have to be found within the existing railway network. From a traffic perspective, Mr Black considers that such a facility should be accessed off an arterial road designed for heavy commercial vehicles, such as an industrial area, with sufficient traffic capacity to enable safe access and egress to the loading facility.
691. Mr Black's memo has recommended that a new objective and policy be added to the precinct to encourage alternative transport methods to service the landfill. I have supported these amendments and they can be seen in **Attachment 1**.
692. A couple of submissions that seek that PC42 be declined have raised road maintenance issues. Mr Black notes that the ITA of WMNZ assumes that the road safety upgrades undertaken by NZTA through Dome Valley will suffice for the operational life of the landfill.
693. NZTA are responsible for maintaining their roads and therefore would undertake any maintenance deemed necessary. Additionally, Heavy Commercial Vehicles are subject to Road User Charges which would go some way to the cost of additional maintenance as a result of the landfill trucks. Mr Black also notes the difficulty of attempting to attribute an extent of damage to the roads specifically to additional landfill trucks on SH1. He considers that additional road maintenance costs should not be considered from a traffic perspective for this plan change when considering the operational activities of the landfill
694. A couple of submissions that seek that PC42 be declined raise issues with the traffic movement projections. The applicant's ITA assume that waste truck movements to and from the north of the proposed site will be similar to those of the existing Redvale Landfill. One submitter (#149) has highlighted that the potential for waste operations in the Mangawhai area to travel to Wayby Valley Road is also a reality. Therefore, closer scrutiny should be given as the perimeters around this, based on the assumption that the 'small northern population base' will remain when it is not destined to stay small going forward.
695. Mr Black notes that additional truck movements north of the proposed precinct site through Wellsford that are generated by the landfill activity are comparatively insignificant compared to those coming from Auckland (south). They equate to up to two truck movements a day, consistent with current volumes associated with Redvale Landfill (discussed further in Section 3 of Mr Black's memo in **Attachment 5**).

696. The applicant's ITA identifies that up to two truck movements per day will operate from the north. As SH1 through Wellsford is the primary route for the movement of heavy commercial vehicles, Mr Black considers that the truck movements from the north associated with the landfill are negligible given that the predicted heavy commercial vehicles in 2028 is expected to be 1,700 truck movements per day through Wellsford.
697. Another submitter (#111) highlights the lack of information on collection catchments and specific transport routes for a potential landfill and raises concern that waste could come from anywhere in the Auckland region.
698. Mr Black has looked at possibly alternative routes to access the landfill from the Auckland Region. The primary route is SH1 to the north, which will be dual carriageway from Auckland to Warkworth after the completion of the Puhoi to Warkworth project. These roads provide a fast and safer corridor for trucks to travel to access the landfill site. The exception is the Dome Valley section of SH1 which is discussed earlier.
699. Mr Black notes that the alternative route would be SH16 via Helensville, which will be a longer route and slower and is therefore unlikely to be used for day to day landfill truck movements. Mr Black still considers that the traffic movement projections are correctly assessed within the applicant's ITA.
700. I agree with the above comments of Mr Black (and those in his memo) regarding the submissions seeking that PC42 be declined in light of the potential effects on transport.
701. I note that the potential effects on transport are addressed more fully in section 11.8 of this report. This section shows that PC42 does not need to be declined due to the potential effects on transport. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential effects on transport are able to be considered during that process.

14.1.8. Risks to the environment

702. A number of submitters seeking that PC42 be declined also raised concerns around the potential risks to the environment, especially from the potential for leachate to get into the waterways. Many submitters highlighted that there is geotechnical instability in the area and the Dome Valley receives a very high amount of rainfall.

703. Some examples of the comments from submitters on this issue are shown below:

"The position of this proposed landfill site appears to present medium to high risks of pollution due to the hill topography" (#8)

"I am worried [that the rules] will no longer be followed by Waste Management if they are granted the landfill precinct" (#31)

"...these catchment valleys also pose a severe fire risk to the native bush and pine forest areas. I have witnessed two fires in recent years – one which closed SH1..." (#39)

"Leachates will be generated and there is no guarantee that the landfill liners will not in the long term fail due to high rainfall, microbial activity as well as pest species such as rodents compromising the landfill liners allowing leachates to be transported through aquatic systems from discharges from the landfill. Springs / tomes spontaneously occur in the area. These could affect the integrity of the landfill liner leading to breaches. Leachates are dissolved toxic compounds produced through the landfill process." (#66)

“Geology and water systems - The proposed site consists of fractured upthrust sandstone and mudstone layers, topped with reactive clay. The cracking and swelling clay causes gradual ground movement or sudden slips. Water flows carve intermittent underground streams, forming tomos and springs. These streams will often disappear down cracks in the uplifted bedrock thus contributing to the underground aquifers. This combination also results in high risk of slips on the surface...The elevated site is exposed to north - north westerly winds, highly localized rain, lightning and thunderstorms. The Dome Valley area experiences high rainfall, normally in the winter months, but also is prone to summer cyclones predominantly from the north east. These high rains cause extreme flood events and large slips in the area, particularly where earthworks such as a landfill site would include.” (#108)

“Waste Management NZ, who are the applicants, can give no guarantees that toxic leachate and other pollutants will not find their way into the Kaipara Moana” (#127)

“Has nothing been learnt from the landfill environmental disaster at Fox Glacier.” (#157)

“The landfill is being built in close proximity to waterways leading to the Kaipara Harbour. I'm afraid the toxic chemicals from the landfill will leach into the soil and further into the waterways.” (#169)

“Dome Valley is a very unstable region.” (#353)

704. The potential effects around risks to the environment are addressed in nearly all the sections of the Assessment of Environmental Effects in section 11 of this report. However, specifically in response to these submissions sections 11.4, 11.9, 11.10, and 11.11 cover groundwater and aquifers, geotechnical risk, waste acceptance and environmental risk, and landfill engineering and operations.
705. In regard to submitter concerns around slope stability, the council's geotechnical specialist Mr Roberts concludes in section 11.9 that while there is some instability with the proposed precinct area, it appears to be limited to instances of groundwater seepage at the soil and rock interface. There is no evidence that there is instability in the bedrock. The known instability is at a superficial level and can be adequately mitigated through design and construction measures.
706. The groundwater specialist for the council, Mr Perwick, notes that submitters have raised concerns about physical hydrogeology of the area, notably:
- Fractured nature of the area's geology, and perceived high propensity for subsurface (groundwater) flow and migration of leachate (or other) contaminants.
 - High rainfall and high rainfall intensities of the area, and lightning storms - and inference of the location being 'unsuitable' due to risks of surface flooding and/or underground migration of leachate (or other) contaminants.
 - The noted presence of numerous 'springs', 'tomos', 'underground streams', (e.g. Springhill Farm') and the inference that the location is unsuitable due to the prevalence of these features (e.g. impacts this could have on the liner, and propensity for contaminant migration).
 - Impacts on recharge to the underlying/surrounding aquifers and streams.
707. Mr Perwick also notes that submitters have raised concerns about the landfill liner and consequent leachate release to groundwater, notably:

- Liner failure and/or large 'event' (e.g. landslide, fire, earthquake, etc) that could cause a substantial leachate release (or other release) of contaminants - with consequent damaging environmental and/or other effects.
 - Degradation/failure of the landfill liner over long-term time periods, and concurrent release(s) of leachate (or other) contaminants - given that the contaminants could last for hundreds of years.
708. Mr Perwick agrees that there are valid concerns relating to the physical hydrogeological suitability of the proposed precinct, in terms of hosting a landfill. These are particularly those related to potential impacts on recharge to the underlying / surrounding aquifers. Mr Perwick notes that the submissions raising concerns with the landfill liner are primarily related to the landfill engineering discipline (of Mr Pattle), but does agree that this issue is also pertinent to groundwater, as groundwater is the immediate receiving environment for any potential leakage through the lining system. In section 11.4 of this report, Mr Perwick recommends some amendments to the proposed precinct to better address these concerns.
709. The waste acceptance criteria and environmental risk specialist for the council, Ms Webster, has reviewed the submissions relating to this topic. Ms Webster acknowledges the concerns of submitters and states that the wording of the policies and objectives in the proposed precinct places primacy on the avoidance of effects. Ms Webster supports this approach and also recommends a number of amendments to the precinct to improve environmental outcomes. Ms Webster is confident that the requirement to avoid effects in the first instance is well established in the proposed precinct provisions, although she does note that should a landfill be established on the site there will be some adverse effects unable to be avoided.
710. The landfill engineering and operations specialist for the council, Mr Pattle, has reviewed the submissions and notes that there is concern about a range of effects such as high rainfall, unstable land, flooding, groundwater contamination. However, he is of the view, based on the information provided by the applicant, that none of these issues are so extreme that they cannot be satisfactorily managed by best practice engineering approaches and measures. Mr Pattle notes that infrastructure, including other landfills, contend with these conditions in the local area or in other situations where similar environmental conditions are present.
711. However, Mr Pattle does agree that the concerns raised by submitters are valid and need to be addressed thoroughly in any future landfill development plans to ensure they do not result in the outcomes feared. Mr Pattle states that the precinct provisions are structured (as they should) so that the activities with the highest potential effect have discretionary or non-complying status, giving more latitude to manage the effects of these issues through the resource consent process.
712. I agree with the above comments of Mr Roberts, Mr Perwick, Ms Webster, and Mr Pattle regarding the submissions seeking that PC42 be declined in light of the potential risks to the environment.
713. I note again that the potential risks to the environment are addressed more fully in sections 11.4, 11.9, 11.10, and 11.11 of this report. These sections show that PC42 does not need to be declined due to the risks to the environment. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential risks to the environment are able to be considered during that process.

14.1.9. Potential effects on local amenity and human health

714. A smaller number of submitters seeking that PC42 be declined raised concerns around the potential effects on local amenity and to human health. The local amenity concerns are centred around issues such as potential effect of noise, dust and odour and the effect on views. The concerns around human health are primarily related to the contamination of groundwater.

715. Some examples of the comments from submitters on this issue are shown below:

“Genuine concern for the...food chain.” (#29)

“...water is currently supplied to the community, tourists, and rural tank top -ups by water companies. Flooding may cause back wash of leachates, sediments and rubbish towards the water intakes and source degrading the quality of the water.” (#66)

“LPG (landfill gases) such as methane and other gases (including carbon dioxide and sulphur dioxide) will be released into the environment from the landfill during operation having adverse impacts on...local residents...Rubbish distribution is likely throughout the surrounding environment by wind and rainfall...This will cause:... distasteful views for the community when seen . . . Visual nuisance (on people and animals)...distasteful views of multiple rubbish trucks (300-500 a day) travelling on our small country roads.” (#76)

“I am a resident of Wellsford town [and] the proposed use of this land is only 3.5km away from the town centre.” (#104)

“...Impact on people and the community – recreation – health risks...Nuisances – odour, noise, dust, vibration, light, visual nuisance (on people and animals), rodents, invasive weed species caused by the development and operation of the landfill.” (#144)

“Leachates and rubbish spread through the environment will bring with them bacteria, carcinogens, toxins, an infection substances that will have adverse health impacts...Landfill development and operation will involve: ...releasing dust into the environment, disrupting nearby species and people with loud noises and vibrations, producing a bad smell which would spread easily on high winds in the area, distasteful views of multiple rubbish trucks (300-500 a day) travelling on our small country roads. potential spread of odour neutralising salts/zeolite...” (#157)

“...I note that the plan submitted with the application indicates the extent of the landfill precinct and its operations to encompass the entire Waste Management site (1000ha) with Sub Precincts A and B indicated. This gives us increased concerns for the effects to neighbouring properties.” (#166)

“The landfill poses multiple high impact risks to the environment,...particularly...to the local and regional community.” (#395)

“Smell pollution. Increased rubbish blowing off trucks into the surrounding area.” (#396)

“Noise pollution to surrounding properties from valley. Air quality at site and on transport routes. Light pollution. Hours of operation.” (#399)

“The beauty of the Dome Valley area ruined by hundreds of trucks per day...” (#401)

“Increased noise and pollution. Impact on surrounding properties” (#407)

716. The potential effects on local amenity and human health are addressed in a number of sections of this report including 11.12 Air quality, 11.13 Noise, 11.14 Health risk, 11.15 Landscape and visual, and 11.18 Positive effects.
717. In regard to submitter concerns around local amenity being affected by poor air quality, dust or odours, the noise specialist for the council, Mr Crimmins, notes that while he has not assessed these issues in great detail for PC42, he has done so for the related resource consent application, where is it more appropriate to do so. He does not consider that there is anything inherent in the proposed precinct site that would make it unsuitable for a landfill due to poor air quality impacting on neighbours. In fact, Mr Crimmins notes that the location of Sub-precinct A is at least 1km from the nearest neighbour, which meets the standards for a landfill location in industry guidelines. The relatively isolated location of Sub-precinct A is covered under the positive effects in section 11.18 of this report.
718. Mr Crimmins notes that one submission (#127) references a study that identified a correlation between proximity of residents to nine Italian landfills and poor health outcomes, including respiratory disease and mortality. This study is referenced in a literature review into the potential association between landfills and population health effects along with other similar studies, largely completed in Europe.
719. Mr Crimmins agrees with the applicant's health assessment report that the literature regarding population health effects and landfills is unclear as to any correlation and/or required separation distances for landfills. There is an absence of data regarding health effects from modern landfills. He notes that any future landfill proposed within the precinct would be also subject to a detailed health-risk assessment, including analysis of any further scientific studies released.
720. In regard to submitter concerns around local amenity being affected by noise, the noise specialist for the council, Mr Styles, has reviewed submissions as they relate to noise effects. The issues raised in the submissions broadly relate to:
- Construction and operational noise effects on the amenity of adjacent sites, including nearby recreation areas
 - General concerns relating to the overall level and frequency of landfill noise effects
 - Increase in traffic through Dome Valley (and associated noise effects)
 - Location of the bin exchange (whether an alternative location would reduce noise to receivers)
721. Mr Styles identifies that the proposed precinct does not seek to introduce any new rules specifically around noise and therefore all the relevant provisions of *Chapter E25 - Noise and vibration* in the Unitary Plan would continue to apply. Mr Styles has not identified any submissions that raise specific concerns relating to the adequacy or appropriateness of the existing Unitary Plan noise management framework to manage the actual/ potential noise effects arising from activities within the precinct.
722. Mr Styles also notes that PC42 in itself will not authorise any permitted or controlled activities landfill within the precinct. As the concerns raised in the submissions primarily relate to the effects arising from the construction and operation of the landfill, the concerns raised in the submissions primarily fall under the scope of the resource consent process.

723. Mr Kensington, the landscape and visual specialist for the council has reviewed the submissions that raise the issues of visual pollution (from rubbish and trucks) and visual effects for close neighbours.
724. In terms of visual pollution (from rubbish and trucks), Mr Kensington acknowledges that the precinct would provide for the introduction of an activity into this landscape that may be perceived by people as being out of character with the existing environment. He also agrees that there is the potential for adverse visual effects to arise through rubbish distribution through the wider landscape (wind-blown from trucks, for example).
725. However, Mr Kensington's opinion is consistent with the landscape information lodged by WMNZ. That is, given the remote nature of the precinct, the landfill activity being required to be within 'Sub-precinct A' (located in a visually discrete part of the precinct), the likelihood of external adverse visual effects from landfill activity within the WMNZ landholdings will be very limited.
726. Mr Kensington notes that from a site visit to the Redvale Landfill that WMNZ has a good track record in managing that property so that rubbish is well contained within the site. He considers that the use of mechanisms such as a Landfill Management Plan, in combination with other enforceable consent conditions, would assist with setting requirements to ensure the management of visual nuisance issues that might occur from rubbish inadvertently being strewn throughout the local landscape.
727. Mr Kensington gives an example that conditions of consent could require the regular collection and disposal of rubbish that might accumulate within the vicinity of the site entrance in the state highway corridor. In addition, the establishment and ongoing involvement of a Community Liaison Group and management of complaints can be an appropriate avenue for these types of issues to be raised and addressed.
728. In terms of visual effects for close neighbours, Mr Kensington had anticipated that some submitters within nearby private properties would raise adverse visual effects issues. For example: '*...the view from our house will be changed by proposed landfill activity, so that our outlook is compromised...*'. However, he has not viewed any submissions specifically raising this issue.
729. He does however note that there are a number of submitters whose addresses on their submission shows they are located in close proximity to the proposed precinct site (#82, #128, #96, #154).
730. Mr Kensington undertook a recent site visit with WMNZ's landscape architect to check the location of the above submitters. As a result, it is his preliminary opinion that landfill operations within 'Sub-precinct A' area will not be visible from these submitter properties. To confirm matters and to further assist with an assessment of this potential issue, it is understood that WMNZ will be including, as part of their evidence for the hearing, refined Zone of Theoretical Visibility (ZTV) mapping which will clearly identify the location of existing dwellings within the wider landscape, including highlighting the location of the above submitters.
731. The health risk specialist for the council, Ms Tang, has reviewed the submissions as they relate to human health risk and notes that they can be classified into the following main groups:
- site considered unsuitable for a landfill due to effect on water supply, food sources, recreation due to close proximate to the freshwater waterways, Hōteu River and Kaipara Harbour;

- concern on impact on roof water supply, agricultural land;
 - concern on risk to wellbeing and economies of Kaipara Harbour coastal community due to potential health risks which may require stopping water activities immediately;
 - concern on degradation of natural state of land, and adverse effects on the morale, health and wellbeing of the local community and people,
732. In section 11.14 of this report, Ms Tang states that she is satisfied that WMNZ has been able to demonstrate that the long-term health effects from a potential landfill in this location under PC42 are acceptable. However, she does have some concerns about the short-term effects from events such as storms. Ms Tang recommends a number of changes to the precinct provisions and notes that WMNZ will need to address the potential short-term health effects in their evidence at the hearing.
733. Subject to that evidence being presented, I am of the view that the health risk effects of a potential landfill on this site can be adequately managed through various methods as outlined by the applicant.
734. I agree with the above comments of Mr Crimmins, Mr Styles, Mr Kensington, and Ms Tang regarding the submissions seeking that PC42 be declined in light of the potential effects on local amenity and human health.
735. I note again that the potential effects on local amenity and human health are addressed more fully in sections 11.12, 11.13, 11.14, 11.15, 11.18 of this report. These sections show that PC42 does not need to be declined due to the potential effects on local amenity and human health. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential effects on local amenity and human health are able to be considered during that process.

14.1.10. Cultural effects

736. Some submitters seeking that PC42 be declined raised concerns around cultural issues. I note that the submissions of the iwi groups below are more fully addressed in section 11.1 of this report:
- Environs Holding Ltd environmental subsidiary of Te Uri o Hau Settlement Trust (#35)
 - Ngāti Whātua Ōrākei (#45)
 - Te Rūnanga o Ngāti Whātua (#132)
 - Ngāti Manuhiri Settlement Trust (#138)
 - Te Ohu Kaimoana (#143)
 - Ngā Māunga Whakahii o Kaipara Development Trust (#149)
 - Puatahi Marae (#361)
 - Tinopai Resource Management Unit (#398)
 - Ngāti Rango (#412)
737. In addition to these submissions, cultural effects was a matter raised in a number of other submissions. Some examples of the comments from submitters on this issue are shown below:

“As kaitiaki of Papatoanuku we have a responsibility to protect our taiao. This plan by the council clearly risks the wellbeing of the whenua and moana” (#8)

“Failure to recognise the mana of Ngāti Whātua o Kaipara as partners in te Tiriti o Waitangi with their role as kaitiaki for the whenua (land), awa(river tributaries) flowing into the Kaipara Harbour and the Kaipara Harbour itself.” (#66)

“you think that just because ur the regional council you can do what you won't at the price of our Kaipara? I'm from Otamatea on the Kaipara. Our marae is there, our urupaa is on the Kaipara, our whānau land is based there, we eat from the rich Kai we get from her (yes the Kaipara is a women she gives life an staple food sauce for all people not just Māori). UR Dump will kill it “(#70)

“Adverse impacts to Papatunuku and mauri” (#107)

“The Aukati Rāhui placed on this land has not been acknowledged in this application. The RMA gives national importance to the relationship of Māori and their culture and traditions with their ancestral lands, water etc.” (#130)

“Adverse cultural effects to Te Rūnanga o Ngāti Whātua and the related cultural landscape where the proposal is located; Rāhui instituted by Te Rūnanga o Ngāti Whātua and their hapū and Marae in opposition to the proposal; Intergenerational impacts including future generations impacted by the long term landfill legacy” (#146)

“Under the Te Tiriti o Waitangi I submit to the Aukati rāhui and authority held by mana whenua Te Uri o Hau, Ngāti Manuhiri, Ngāti Rango and Ngāti Whātua and support their wisdom in protecting the environment. Many who care for the environment stand united in preventing the waste site. Due to the cultural, ecological and environmental impacts of the proposed landfill we come to the conclusion that the landfill project be terminated before damage occurs.” (#188)

“An Aukati Rāhui has been placed over the area.” (#343)

“My genealogy is connected to the Hōteo River.” (#351)

738. The potential effects on cultural issues are addressed in 11.1 this report. I acknowledge the cultural effects raised by the iwi groups. It is clear that in a Māori world view paradigm, a potential landfill under PC42 could have effects on concepts such as mauri, Papatūānuku, kaitiakitanga, rāhui, and mana that are real. Therefore, these effects need to be considered in the assessment of PC42.
739. However, I highlight that the provisions in the proposed precinct under PC42 do not permit a landfill to be established. Rather, a new landfill is a discretionary activity in the precinct. As outlined in section A1.7 of the Unitary Plan activities are classed as discretionary where they are not generally anticipated to occur in a particular environment, location or zone or where the character, intensity and scale of their environmental effects are so variable that it is not possible to prescribe standards to control them in advance.
740. A discretionary activity may be refused for any relevant resource management reason. A full assessment is required to determine whether the activity would be appropriate in terms of the provisions of the Unitary Plan (including all relevant objectives and policies), the effects of the activity on the environment, and the suitability of the proposed location.
741. A discretionary activity does not give a 'green light' to an activity. Therefore, while the proposed precinct sets up a potential pathway for a new landfill to seek consent, the precinct does not guarantee it will be granted. It is entirely plausible that a discretionary resource consent to establish a landfill under the precinct could be declined. It is only

a discretionary activity resource consent that addresses all the matters in section 104 of the RMA that may be granted.

742. The proposed precinct also sets out that a resource consent for a new landfill must be publicly notified, enabling anyone to lodge a submission and become involved in the process.
743. From the discussion above, in my view it is clear that there is scope for cultural effects to be considered through any resource consent application for a landfill under the proposed precinct.
744. It is also important to note that Part 2 of the RMA requires a balancing act and while cultural effects are part of the mix, they do not automatically 'veto' a proposal⁹⁶.
745. I consider that the current objectives and policies of the precinct as proposed by WMNZ will address some of the concerns of iwi outlined in their submissions. However, in addition to this I recommend that further modifications to the provisions are required. These recommendations are included in section 11.1 of this report.

14.1.11. Economic considerations

746. A few submitters seeking that PC42 be declined raised concerns around economic issues, such as the effects on property values, the lack of any overall employment benefits, and the negative economic impacts of any potential pollution from the landfill. Some examples of the comments from submitters on this issue are shown below:

"Concern over...reduction in land value..." (#6)

"The proposed entrance for construction is immediately opposite our property which will have detrimental impact on our property..." (#7)

"I oppose the plan modification because it locks in as a future use the designation of the area as for landfill purposes without fair and reasonable mitigation and compensation to the satisfaction of the communities of North Rodney who are disadvantaged. These communities have social and economic costs forced on them by this modification intended for the benefit of the rest of Auckland." (#24)

"Waste Management NZ claims that the local community will benefit in terms of employment opportunities however in it's application it states that most of the landfills employees will be relocated from its Redvale landfill." (#66)

"Employment issues - although the landfill development and operation will offer a few jobs, the overall presence of the landfill will cause loss of jobs elsewhere. It is understood that many Redvale landfill employees will relocate and fill most of the job opportunities. Expected job losses elsewhere could include:

- farmers alongside the Hōteio River and Kaipara Harbour.
- local tour operators and accommodation suppliers.
- fisherman who both recreationally and commercially use the harbour as a resource to feed their families." (#76)

"Employment issues, although the landfill will create a few jobs there will be loss of jobs in other areas." (#144)

⁹⁶ *Verstraete v Far North District Council* [2013] NZEnvC 108 (paragraphs 87-90)

“We have significant concerns that if this unitary plan is approved that it will have a negative impact on shareholders enjoyment of this property and the value of the property as an asset.” (#154)

“The Economics Assessment...refers to the cost of an alternative landfill being \$14.5M per year in the year 2028. This cost is insignificant compared to the potential environmental cost discharges into the Hōteu river system, the loss of recreational activities and the community wellbeing. The area borders the new Auckland Downhill Mountain Bike Club Dome Valley Mountain Bike Park. The Matakana Coast Trail Trust estimated the Mountain Bike Park and surrounding trails will have in excess of 700,000 visits per year. Matakana region has 200,000 visitors per month, mostly from Auckland City. Woodhill by comparison has approximately 400,000 visits per year. The MCTT believe the recreational benefits to the Auckland region outweighs the economic benefit of a landfill located at Wayby Valley.” (#373)

“Transportation cost to rate payer and tax payer due to distance from source and where bin transfer stations may be along the way.” (#399)

747. With regard to potential employment benefits from a potential landfill in the proposed precinct, I agree with the submitters that these will not be significant. As stated in section 11.17, I agree with the council economists that there is unlikely to be any significant employment gains from the new landfill, as it is simply proposed to replace another one that will close.
748. I consider that the overall economic/financial costs and benefits of a potential landfill under the proposed precinct are fairly neutral. In my view, the economic benefits seem overstated by WMNZ.
749. In terms of any effects on property values, I agree with the WMNZ economist who states that property value effects are a reflection of, not in addition to, adverse effects (if any) from the landfill for nearby residents. Any change in property value effect does not materialise unless and until an owner sells the property. At this point there is a wealth loss to the seller, but no ongoing adverse effects to be borne by the seller. The purchaser of the property gains by having to pay a lesser price for the property but experiences any costs of any ongoing adverse effects. The Environment Court has accepted that to include both adverse effects for local residents and property value effects would involve double counting⁹⁷.
750. In terms of submitters raising the additional travel costs for trucks to deliver waste to the Wayby Valley site, I consider travels cost to be a commercial consideration for WMNZ and not something to consider under the RMA.
751. The economic effects are addressed more fully in section 11.17 of this report. This section shows that PC42 does not need to be declined due to the economic matters. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential economic effects are able to be considered during that process.

14.1.12. Landscape, natural character, and visual effects

752. A few submitters seeking that PC42 be declined raised concerns around the effects of a potential landfill on the areas landscape and character.
753. Some examples of the comments from submitters on this issue are shown below:

⁹⁷ *Foot v Wellington City Council* ENE Wellington W73/98, 2 September 1998 (paragraphs 249-256)

“We do not believe the area/site proposed is an appropriate or suitable location for a landfill to be constructed, given its close proximity to local community and enjoyed public spaces, potential impact on the [pristine] natural environment” (#7)

“Allowing this landfill to proceed would be a gross failing of your duty as Mayor to protect scenic areas of high natural values ... Special valley – the beauty of the place This is a beautiful area and doesn’t need to be destroyed by a landfill ... In beautiful scenery ... Leave one of the most beautiful landscapes in the world alone ... Why put a landfill in such a beautiful area ... I drive through that valley every so often, and it is one of the especially beautiful sections along HWY 1. Whose idea was it to foul the place with a tip?” (#8)

“It [the proposed landfill] will have significant adverse effects on the natural character of the area.” (#9)

“Adverse landscape and natural character effects.” (#35)

“This area is far too beautiful to ruin with a landfill. The residents have purposely moved here to live in a beautiful pristine and natural environment...” (#119)

“The proposal results in more than minor, including significant, actual and potential adverse effects to the environment. These include: Intrinsic values, amenity, and quality of environment; Landscape and natural character...” (#149)

754. Mr Kensington, the landscape and visual specialist for the council has reviewed the submissions that raise the issues around landscape, natural character, and visual effects. He acknowledges that people will have an awareness of the landfill activity within the localised landscape – for example people viewing from the state highway within vehicles passing by the facility entrance and also viewing activity associated with progressive construction of stockpile areas.
755. However, Mr Kensington is of the opinion that the majority of the site is remote and will not readily be visible beyond the boundaries of the precinct. This includes the ‘Sub-precinct A’ area which is located in a visually discrete part of the precinct, with landform and existing vegetation being mitigating factors to ensure that landfill activity will not be visible from public viewpoints. The proposed precinct provisions require the avoidance of any activity within the identified Outstanding Natural Landscape and there are opportunities for landscape enhancement, through mitigation and remediation planting within the precinct.
756. As such, Mr Kensington observes that while there may be some localised adverse effects on landscape character and quality that will arise in areas internal to the precinct (primarily as a result of site establishment and initial construction works and from the landfill itself), he considers that people experiencing the precinct area from external viewpoints, will be adversely affected to a low degree as a result of landfill activities.
757. Mr Kensington notes that the site is located within the context of an existing landscape of extensive areas of production forestry, with the management of this resource resulting in similar landscape and visual effects. In his view, the requirement for the preparation, implementation and ongoing maintenance of remediation and mitigation measures to improve landscape and visual amenity values (through a Landfill Management Plan) will assist in achieving this appropriate outcome.
758. Given the low assessed sensitivity and quality of this landscape, Mr Kensington considers that adverse landscape, natural character and visual amenity effects can be appropriately avoided, remedied and mitigated through the consenting process.

759. I agree with the above comments of Mr Kensington regarding the submissions seeking that PC42 be declined in light of the landscape, natural character, and visual effects.
760. I note that the landscape, natural character, and visual effects are addressed more fully in section 11.15 of this report. This section shows that PC42 does not need to be declined due to the landscape, natural character, and visual effects. To establish a new landfill under PC42 a fully notified resource consent for a discretionary activity must be obtained. The potential effects on landscape, natural character, and visual effects are able to be considered during that process.

14.1.13. Contribution to climate change

761. A few submitters seeking that PC42 be declined raised concerns around the contribution of a potential new landfill on climate change. Some examples of the comments from submitters on this issue are shown below:

“Effects of 300 return truck journeys every day from Auckland and the sustainability of carting waste in diesel trucks 80 kms from Auckland with their carbon dioxide promoting global warming.” (#66)

“Transporting the bulk of material more than 100 Km cannot be viewed as a solution for a progressive forward thinking country endeavoring to set an environmental example for efficient long term waste treatment.” (#71)

“The carbon footprint of the transportation of the waste to the site by road is huge.” (#124)

“The current proposed landfill documents suggest up to 300 return trips to the landfill by waste trucks in the first years of operation, rising to up to 500 return trips by 2060. Even if we conservatively estimate an average of 200 return trips 5 days a week, that is 52,000 return trips by heavy waste trucks per year. This is quite a contribution to carbon emissions but is not addressed in the response to the council's draft Climate Action Framework. Thus, the plan change request fails to deal adequately with all the climate change consequences of the landfill in terms of the council's draft Climate Action Framework.” (#221)

“...they should be banned because of landfills uncontrollable Global Warming emissions to atmosphere.” (#378)

“The impact of 300 truck movements per day with round trips of approx 200km per trip is another major impact on climate change and our environment.” (#410)

762. Submissions generally outlined the following climate change concerns:
- Increased transport distances involving trucks
 - Gas release from the landfill
763. The potential effects on climate change are addressed in section 10.7.4 of this report and outlined in **Attachment 10**. Essentially, the council does not have any authority to consider these effects as the RMA currently prohibits councils from making rules regarding or considering the climate change effects of any greenhouse gas emissions.
764. Therefore, at this time the greenhouse gas emissions from the landfill (methane and carbon dioxide associated with landfill gas) and vehicle movements (carbon dioxide associated with vehicle exhausts) are outside of the scope of the council's assessments under the RMA.

14.1.14. Landfills should not be considered as infrastructure

765. A small number of submitters seeking that PC42 be declined argued that landfills should not be referred to as infrastructure. Their concern was that by doing so, it would enable a landfill to justify adverse effects on the environment in the name of providing 'infrastructure'.
766. I cannot agree with the submissions on this point. *Chapter J – Definitions* of the Unitary Plan classifies infrastructure as below:

Infrastructure has the same meaning as in section 2 of the Resource Management Act 1991 and also means:

- bulk storage for wholesale or distribution purposes of natural or manufactured gas over 15 tonnes, or petroleum over 1 million litres;
- storage and treatment facilities for a water supply distribution system;
- storage, treatment and discharge facilities for a drainage or sewerage system;
- **municipal landfills;**
- national defence facilities; and
- facilities for air quality and meteorological services.

[Emphasis added]

767. A 'municipal landfill' is specifically included in the definition of infrastructure. Therefore, within the sphere of the Unitary Plan, a landfill must be considered as infrastructure. I note that PC42 does not propose to change the definition of 'infrastructure'.

14.1.15. Other reasons for opposition

768. In addition to the main themes above from those submitters seeking that PC42 be declined, a wide range of other concerns were raised.
769. One theme from these concerns was around the issue that a potential landfill would jeopardise the restoration work around the Kaipara Harbour that had been occurring for many years.
770. I do note that the Kaipara Harbour is in a degraded state and a large amount of resources has been spent trying to restore it over the past decades. I am also aware that earlier this year the Government announced, under its Jobs for Nature package, a contribution of up to \$100 million towards \$200 million for the six-year Kaipara Moana Remediation Programme. The project's aim is to halt degradation of New Zealand's largest harbour and estuary⁹⁸.
771. Based on the analysis in other sections of this report such as 11.2 Freshwater ecology and 11.3 Terrestrial ecology, I do not consider that PC42 and the addition of a precinct into the Unitary Plan will jeopardise or make it not worthwhile to continue the restoration work on the Kaipara Harbour.
772. Another theme from these concerns was that the prospect of a new landfill in Wayby Valley breaks past 'promises of no new landfills'. Submitters referred to:
- Court decisions that said there would be no more landfills in New Zealand
 - Auckland Council previously stating it would not support the establishment of new landfills along with declaring a Climate Change Emergency,

⁹⁸ <https://www.mfe.govt.nz/funding/jobs-for-nature/projects-map>

- The Puke Coal landfill was supposed to be the last landfill in New Zealand.
773. I have researched the cited court cases, investigated the council records, and undertaken general research and I can find no reference to a promise that there would be no new landfills in either Auckland or New Zealand.
774. The issue of microplastics was another theme to emerge from these concerns. Microplastics, plastic pieces less than 5mm in size, are used in manufacturing, industry, and 3D printing and are in consumer products such as synthetic clothing fabric, toothpaste, and skincare products.
775. Ms Tang, the health risk specialist for the council, notes that due to the wide use of plastic, municipal landfills are expected to be a source of microplastic contamination. However, microplastic pollution including drinking water is a newly emerging issue around the world. The World Health Organization has called for further assessment of microplastics in the environment and their potential health impact. Since the effect of microplastics in human health is not well understood, a specific assessment of the health effects of PC42 and microplastics is difficult. I also note that such a matter could be part of waste acceptance criteria for the landfill and is better addressed through a national approach led by the government.
776. Another theme of concern was around process issues including:
- Not enough consultation / not enough time to consider proposal
 - Decision should be delayed
 - Auckland Council has a conflict of interest – PC42 should be processed with northern councils
 - This is rural land being taken over by Auckland Council and rezoned
 - PC42 is unlawful
 - Bypasses environmental regulations already in place
 - Should not be allowed to significantly change the plan like this
 - A private plan change application subverts the democratic process
 - Could set a precedent
 - Accepting this plan change will mean a landfill will be accepted as normal
777. The issues around notification periods and delaying the process are covered in section 8 of this report. I do not consider that Auckland Council has a conflict of interest on PC42 and the council is not involved in the project as outlined in section 3.3 of this report. I note that a private plan change is a legislated process under the RMA and the council has very limited grounds to refuse to process a request. As outlined in section 14.21 of this report, I do not consider that PC42 would set a precedent.
778. Another theme of concern was around issues with the requestor of the private plan change, WMNZ. These were around WMNZ being foreign owned, a big corporate interest, and having no long-term stake in New Zealand. Some submitters stated a lack of trust in WMNZ and they were worried they wouldn't follow required conditions/standards. Some also believe that WMNZ chose to notify PC42 in conjunction with the COVID-19 Level 4 lockdown in March 2020 in order to reduce the opportunities for feedback.
779. I consider that all these statements are irrelevant in considering PC42 under the RMA.
780. Some submitters stated that WMNZ had failed to comply with the conditions of purchase from the Overseas Investment Office. I note that this is a matter outside the scope of the RMA.

Recommendation

I recommend that submissions 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 16.1, 17.1, 18.1, 19.1, 20.1, 21.1, 22.1, 23.1, 24.1, 26.1, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1, 34.1, 35.1, 36.1, 37.1, 39.1, 40.1, 41.1, 42.1, 43.1, 44.1, 45.1, 46.1, 47.1, 48.1, 49.1, 50.1, 51.1, 52.1, 53.1, 54.1, 55.1, 56.1, 57.1, 58.1, 59.1, 60.1, 61.1, 62.1, 63.1, 64.1, 65.1, 66.1, 67.1, 68.1, 69.1, 70.1, 71.1, 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 86.1, 87.1, 88.1, 89.1, 90.1, 91.1, 92.1, 93.1, 94.1, 95.1, 96.1, 97.1, 98.1, 99.1, 100.1, 101.1, 102.1, 103.1, 104.1, 105.1, 106.1, 107.1, 108.1, 109.1, 110.1, 111.1, 112.1, 114.1, 115.1, 118.1, 119.1, 121.1, 122.1, 123.1, 124.1, 125.1, 126.1, 127.1, 128.1, 129.1, 130.1, 131.1, 132.1, 133.1, 135.1, 136.1, 137.1, 138.1, 140.1, 141.1, 142.1, 143.1, 144.1, 145.1, 146.1, 147.1, 148.1, 149.1, 150.1, 151.1, 152.1, 153.1, 154.1, 155.1, 156.1, 157.1, 158.1, 159.1, 161.1, 162.1, 163.1, 164.1, 165.1, 166.1, 167.1, 168.1, 169.1, 170.1, 171.1, 172.1, 173.1, 174.1, 175.1, 176.1, 177.1, 178.1, 179.1, 180.1, 181.1, 182.1, 183.1, 184.1, 185.1, 186.1, 187.1, 188.1, 189.1, 190.1, 191.1, 192.1, 193.1, 194.1, 195.1, 196.1, 197.1, 198.1, 199.1, 200.1, 201.1, 202.1, 203.1, 204.1, 205.1, 206.1, 207.1, 208.1, 209.1, 210.1, 211.1, 212.1, 213.1, 214.1, 215.1, 216.1, 217.1, 218.1, 219.1, 220.1, 221.1, 222.1, 223.1, 224.1, 225.1, 226.1, 227.1, 228.1, 229.1, 230.1, 231.1, 232.1, 233.1, 234.1, 235.1, 236.1, 237.1, 238.1, 239.1, 240.1, 241.1, 242.1, 243.1, 244.1, 245.1, 246.1, 247.1, 248.1, 249.1, 250.1, 251.1, 252.1, 253.1, 254.1, 255.1, 256.1, 257.1, 258.1, 259.1, 260.1, 261.1, 262.1, 263.1, 264.1, 265.1, 266.1, 267.1, 268.1, 269.1, 270.1, 271.1, 272.1, 273.1, 274.1, 275.1, 276.1, 277.1, 278.1, 279.1, 280.1, 281.1, 282.1, 283.1, 284.1, 285.1, 286.1, 287.1, 288.1, 289.1, 290.1, 291.1, 292.1, 293.1, 294.1, 295.1, 296.1, 297.1, 298.1, 299.1, 300.1, 301.1, 302.1, 303.1, 304.1, 305.1, 306.1, 307.1, 308.1, 309.1, 310.1, 311.1, 312.1, 313.1, 314.1, 315.1, 316.1, 317.1, 318.1, 319.1, 320.1, 321.1, 322.1, 323.1, 324.1, 325.1, 326.1, 327.1, 328.1, 329.1, 330.1, 331.1, 332.1, 333.1, 334.1, 335.1, 336.1, 337.1, 338.1, 339.1, 340.1, 341.1, 342.1, 343.1, 344.1, 345.1, 346.1, 347.1, 348.1, 349.1, 350.1, 351.1, 352.1, 353.1, 354.1, 355.1, 356.1, 357.1, 358.1, 360.1, 361.1, 362.1, 363.1, 364.1, 365.1, 366.1, 367.1, 368.1, 369.1, 370.1, 371.1, 372.1, 373.1, 374.1, 376.1, 378.1, 379.2, 380.1, 381.1, 382.1, 383.1, 384.1, 385.1, 386.1, 387.1, 388.1, 389.1, 390.1, 391.1, 392.1, 393.1, 394.1, 395.1, 396.1, 397.1, 398.1, 399.1, 400.1, 401.1, 402.1, 407.1, 408.1, 409.1, 410.1, 411.1, and 412.3 be **rejected** except to the extent that amendments to the precinct provisions in **Attachment 1** and **Attachment 2** are made in response (i.e. I do not recommend that PC42 be declined, but I do support some amendments restricting the 'as notified' precinct) and any further submissions be determined accordingly.

14.2. Submissions in support of PC42

781. The following submissions seek that PC42 be accepted as notified: 14.1, 25.1, and 38.1.

Discussion

782. The reasons given from the submissions in support of PC42 can be summarised as below:

- Another landfill is needed to cater for Auckland's waste.
- Maintains fair competition in the Auckland landfill market.
- The site is an appropriate distance to any neighbouring properties and has buffering zones.
- WMNZ has an excellent environmental and safety record.
- The technical work shows that the effects can be appropriately managed
- There will be enhancements to local ecology.

- The visibility of the landfill on the planning maps through the use of a precinct provides transparency for owners and occupiers of surrounding properties.

783. Each of these submissions does not go into any detail further than that summarised above. In general, I agree with most of these high-level points and therefore recommend that PC42 be approved and an Auckland Regional Landfill precinct be added to the Unitary Plan. However, as detailed in other sections of this report, I consider that significant modifications are necessary to the precinct provisions. Therefore, I recommend that these submissions supporting PC42 be accepted in part.

784. It is important to note that these submissions in support of the landfill seek the relief that PC42 be accepted. That is, that the notified version of PC42 be accepted. None of these submissions in support seek that the precinct provisions be made any less onerous than those notified in PC42. This is a key factor to highlight in terms of the scope of submissions on PC42, and therefore the changes to the precinct that this report can recommend.

Recommendation

785. I recommend that submissions 14.1, 25.1, and 38.1 **be accepted** to the extent outlined in the recommended precinct provisions in **Attachment 1** and **Attachment 2** – (i.e. approve the plan change with modifications) and any further submissions be determined accordingly.

14.3. Submissions to precinct provisions relating to the potential effects on transport infrastructure

786. The following submissions relate to transport infrastructure in the vicinity of the proposed Auckland Regional Landfill precinct. The submissions either seek changes to the proposed precinct or support the precinct provisions as notified:

Sub point	Submitter	Summary of submission point
15.2	Kaipara District Council	Add a condition to the Plan Change to require the preparation and implementation of a Construction Traffic Management Plan in relation to Crowther Rd and its intersection with SH1.
15.3 (a)	Kaipara District Council	Add criteria to I617.9 to require further information that assesses the potential economic effects on the Kaipara economy - particularly transport of goods and services, road safety/congestion....
113.1	The New Zealand Transport Agency	Support the retention of I617 Objective 3
113.2	The New Zealand Transport Agency	Support the retention of the discretionary status for construction and operation of landfills and ancillary activities in Activity Table I617.4.1
113.3	The New Zealand Transport Agency	Support the requirement for public notification of any application for landfill activities in I617.5
113.4	The New Zealand Transport Agency	Support the insertion of a precinct plan (I617.10) into the Auckland Unitary Plan
116.1	Skywork Helicopters Limited	Amend the objectives, policies, and assessment criteria to incorporate address traffic effects on the wider roading network (particularly in regard to the SH1/Goatley Rd/Kaipara Flats Rd intersection)

Sub point	Submitter	Summary of submission point
117.1	Goatley Holdings Limited	Amend the objectives, policies, and assessment criteria to incorporate address traffic effects on the wider roading network (particularly in regard to the SH1/Goatley Rd/Kaipara Flats Rd intersection)
134.1	Auckland Transport	Amend the objectives and policies to include the following additional objective and policy: <u>"Objective - The Auckland Regional Landfill is designed and operated so as to avoid, remedy or mitigate adverse effects on the transport network"</u> <u>"Policy - Require any development to provide access and manage operations so as to support safe and efficient movement of vehicles, in particular heavy vehicles, accessing the site to or from the public road network."</u>
134.2	Auckland Transport	Retain the discretionary activity status for (A1) Landfill in Sub-precinct A.
134.3	Auckland Transport	Amend I617.9 Special information requirements to include the following: <u>"Information about how the proposed use or occupation of any legal roads within the precinct, including any informed or partly formed roads will be managed. Where any legal roads are affected, information about consultation and/or applications for road stopping undertaken with Auckland Transport, including any recommendations or decisions from Auckland Transport."</u>

Discussion

787. The submissions in this section all relate to the effects of a potential landfill within the proposed precinct on transport infrastructure.
788. Kaipara District Council seeks that a condition be added to the precinct to require the preparation and implementation of a Construction Traffic Management Plan, specifically in relation to Crowther Rd and its intersection with SH1. As outlined in section 11.8 of this report, the requirement to prepare a Construction Traffic Management Plan is supported and is recommended to be added to the Special information requirements section of the precinct. The changes for this are shown in section 11.8 of this report and **Attachment 1**.
789. Kaipara District Council also seek that further assessment criteria are added to the precinct to require further information that assesses the potential economic effects on the Kaipara economy, particularly transport of goods and services, road safety/congestion. In my view this requirement is not necessary as the transport effects from the precinct are not anticipated to be significant as outlined in section 11.8 of this report.
790. I also consider that an economic assessment will be part of any resource consent application in due course and the specific focus on the Kaipara economy is unnecessary (as any economic effects will not be limited to the Kaipara District).
791. NZTA manages the state highway system, including SH1 that runs adjacent to the proposed precinct site. NZTA submissions in support of I617 Objective 3, the discretionary status landfills in Activity Table I67.4.1, and the requirement for public notification of any application for landfill activities in I617.5 is noted. I do not

recommend any significant changes to these provisions (other than some relatively minor amendments to Objective 3 outlined in sections 11.10 and 11.11 of this report).

792. NZTA also support the insertion of a precinct plan (I617.10) into the Unitary Plan as appears in the notified version of PC42. However, I consider that in this case a precinct plan is not necessary. This is because Precinct Plan 1 does not add anything that would not already be shown in the Unitary Plan maps. It merely shows the precinct boundary, the location of the Sub-precincts, and a number of overlays and designations in the surrounding area. A precinct plan is a map within *Chapter 1 – Precincts* that provides more detail of a precinct (e.g. indicative roading network, planting areas). In my view a precinct plan is not required for this proposed precinct and Precinct Plan 1, put forward by WMNZ, adds no value to the precinct.
793. I understand NZTA's submission to support the precinct appearing on the Unitary Plan maps as it will highlight the location of the activity to users of the plan. I also support the identification of the proposed Auckland Regional Landfill precinct on the Unitary Plan maps. However, I consider that Precinct Plan 1 is unnecessary and should be deleted as below.

I617.6(1) Restricted Discretionary Standards

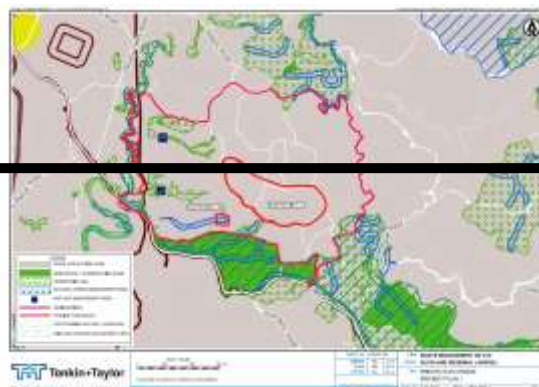
2. Any placement of waste shall only occur within Sub-Precinct A₂,
~~shown on Precinct Plan 1.~~

I617.6(2) Discretionary Standards

1. Any placement of waste shall only occur within Sub-Precinct A₂,
~~shown on Precinct Plan 1.~~

I617.10. Precinct plan

There are no precinct plans in this precinct.



794. Auckland Transport is responsible for the planning and funding of most public transport; operating the local roading network and developing and enhancing the local road, public transport, walking and cycling network for the Auckland Region. Auckland Transport is not the road controlling authority for the state highway network - this falls within the ambit of NZTA. However, it is anticipated that when the proposed Warkworth

to Wellsford motorway project is constructed, NZTA will revoke the state highway status of the existing SH1 and it will become a local road within Auckland Transport's ambit.

795. Auckland Transport's submission seeks that an additional objective and policy be added to the precinct. This is because Auckland Transport consider that the existing objectives and policies do not address the effect of heavy traffic associated with the landfill on the safety and condition of roads providing immediate access to the landfill. They consider that there is a need to specifically address these in the context of the landfill operation rather than relying on the Auckland wide objectives and policies contained elsewhere in the Unitary Plan.
796. I support the new objective and policy and agree with Auckland Transport that their addition is consistent with the statement in the precinct description stating that 'The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or offset / compensate adverse effects'
797. Therefore, I recommend the new objective and policy below be added to the proposed precinct:

Objective

X. The Auckland Regional Landfill is designed and operated so as to avoid, remedy or mitigate adverse effects on the transport network

Policy

X. Require any development to provide access and manage operations so as to support safe and efficient movement of vehicles, in particular heavy vehicles, accessing the site to or from the public road network.

798. I note the support of Auckland Transport for the discretionary activity status of activity (A1) Landfill in Sub-precinct A. I do not recommend any change to this activity status.
799. Auckland Transport has an interest in the legal roads which cross, but do not form part of, the applicant's landholdings. The legal roads are unformed or partly formed. There are also some private roads. Some of the legal roads are within the area identified for landfilling purposes (i.e. Sub-precinct A). It is noted that WMNZ has discussed the road stopping process with Auckland Transport, but has not submitted an application to stop the roads.
800. Auckland Transport's submission notes that WMNZ may have expectations that some of the activities identified in the precinct may use or occupy portions of legal road, including unformed or partly formed portions of road Auckland Transport is responsible for. Auckland Transport will need further information regarding proposals to occupy or use sections of unformed legal road. Auckland Transport will also want to ensure that there will be no obligations, responsibilities, or future costs arising to Auckland Transport from the use of roads within the precinct, especially where heavy vehicles are involved. This will need to be addressed, where relevant, as part of any future resource consent application.
801. Therefore, Auckland Transport seek that the proposed precinct be amended to add in text around the issue of legal roads within the precinct. I agree with this submission as I consider that the legal roads traversing the proposed precinct is a significant issue

(addressed elsewhere in this report). I recommend the following text be added to the precinct:

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.X Activities on or over legal roads within the precinct

(1) All applications must be accompanied by information about how the proposed use or occupation of any legal roads within the precinct, including any informed or partly formed roads will be managed. Where any legal roads are affected, information must be provided about consultation and/or applications for road stopping undertaken with Auckland Transport, including any recommendations or decisions from Auckland Transport.

802. Skywork Helicopters Limited and Goatley Holdings Limited seek that the objectives, policies, and assessment criteria incorporate wording to address traffic effects on the wider roading network, particularly in regard to the SH1/Goatley Rd/Kaipara Flats Rd intersection.
803. Mr Black, the transport specialist for the council, understands that the SH1/Kaipara Flats Road/Goatley Road intersection will be improved as part of the Puhoi to Warkworth motorway project. While he has not seen any plans for this intersection, he expects that the operational and safety concerns of the intersection would have been considered and addressed within the design. Additionally, as the landfill trucks will be travelling northbound and southbound through the intersection as a part of the priority flow of traffic, Mr Black considers that the intersection would not be adversely affected by the additional traffic associated with the landfill when considering the safety of the intersection. I agree with the analysis of Mr Black.

Recommendation

804. I recommend that submissions 15.2, 113.1, 113.2, 113.3, 134.1, 134.2, and 134.3 **be accepted** and any further submissions be determined accordingly.
805. I recommend that submissions 113.4 **be accepted** to the extent that the relief sought is satisfied by the retention of the precinct on the Unitary Plan maps, and any further submissions be determined accordingly.
806. I recommend that submissions 116.1, and 117.1 **be accepted** to the extent that the relief sought is satisfied in amendments to the precinct text outlined in this section, and any further submissions be determined accordingly.
807. I recommend that submission 15.3(a) **be rejected**, and any further submissions be determined accordingly.

14.4. Submissions to precinct provisions relating to potential effects on municipal drinking water

808. The following submissions relate to Watercare's municipal drinking water supply in the vicinity of the proposed Auckland Regional Landfill precinct. The submissions either seek changes to the proposed precinct or support the precinct provisions as notified:

Sub point	Submitter	Summary of submission point
120.1	Watercare Services Limited	Amend the precinct provisions to appropriately recognise the importance of the Regional Aquifer for the municipal water supply for Wellsford, Warkworth and other northern towns now and in the future.
120.2	Watercare Services Limited	Amend the precinct provisions to recognise and protect against the potential cumulative adverse effects of multiple filling pits on the recharge of the Regional Aquifer.
120.3	Watercare Services Limited	Amend the precinct provisions to recognise and protect against the risk of contamination of the Regional Aquifer arising from the additional bores required for future landfills.
120.4	Watercare Services Limited	Amend the precinct provisions to require Watercare to be notified immediately of any contamination breach to the Regional Aquifer arising from activities within the precinct, and timely reporting on the mitigation or minimisation of the effects arising from the breach as per the approved contingency plans.
120.5	Watercare Services Limited	Add text (underlined) to the precinct description to state " <u>The precinct anticipates that future landfill activities may utilise the Waitemata Regional Aquifer for water supply. Watercare uses (or has plans to use) the Waitemata Regional Aquifer to provide municipal water supply to the rapidly growing towns of Warkworth, Wellsford and other northern towns. The precinct provisions protect this aquifer from potential contamination or adverse water quantity effects that may compromise this municipal water supply, and through that the health and wellbeing of the residents of these towns. The objectives and policies of this precinct require an assessment of potential adverse effects on this aquifer and for future landfill activities to avoid adverse effects on the aquifer.</u> "
120.6	Watercare Services Limited	Add a new objective (underlined) to the precinct to recognise the significance of, and protect the Regional Aquifer with the suggested wording " <u>Adverse water quality and quantity effects on the Waitemata Regional Aquifer from activities within the precinct are avoided.</u> "
120.7	Watercare Services Limited	Amend the precinct policies (underlined/struckthrough) as follows "1. Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation <u>where it does not result in unacceptable adverse effects.</u> "
120.8	Watercare Services Limited	Amend the precinct policies (underlined/struckthrough) as follows "3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise: ... d. adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply; and ... <u>X. activities with the precinct shall avoid any adverse effects on the water quality and quantity of the Waitemata Regional aquifer that provides water for domestic and municipal supply.</u> "
120.9	Watercare Services Limited	Amend the precinct policies (underlined/struckthrough) as follows "6. Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that: ... <u>c. offsetting and compensation is not appropriate in relation to adverse effects on the water quality and quantity of catchments and aquifers that provide water for domestic and municipal supply.</u> "

Sub point	Submitter	Summary of submission point
120.10	Watercare Services Limited	Support a Discretionary activity status for new landfills in Sub-precinct A (Table I617.4.1 (A1))
120.11	Watercare Services Limited	Support a Non-complying activity status for new landfills outside Sub-precinct A (Table I617.4.1 (A4))
120.12	Watercare Services Limited	Support a Non-complying activity status any landfill activity that does not comply with the restricted discretionary or discretionary activity standards (Table I617.4.1 (A15))
120.13	Watercare Services Limited	Clarify that under Table I617.4.1 (A3) discharges to land and water from landfills in Sub-precinct A are a Non-complying activity when the land use consent is Non-complying (including when the precinct standards are not met).
120.14	Watercare Services Limited	Clarify what activities the term "landfill activity" is intended to cover (including assurance that it does not cover water take activities).
120.15	Watercare Services Limited	Clarify that the provisions of Chapter E2 of the Unitary Plan (which address water quantity, allocation, and use) continue to apply to the precinct OR if this is not the case add additional policies and activity standards to ensure that activities within the precinct do not result in adverse effects on the quantity of the Regional Aquifer.
120.16	Watercare Services Limited	Amend I617.5 so that discharges to land and water from new and existing landfills in Sub-precinct A are subject to public notification (new text underlined): "I617.5 Notification ... 2. Any application under Rule I617.4.1. (A1), (A2), <u>(A3)</u> , (A4), (A5), <u>(A7)</u> , or (A15) will be publicly notified."
120.17	Watercare Services Limited	Amend the Restricted discretionary and Discretionary activity standards (I617.6(1) and (2)) to protect the Regional Aquifer, provide scope for Watercare to meet its obligations under the Health Act, and the Council to meet its obligations under the NES. The amended standards must include (but are not limited to): monitoring requirements (including detail on frequency, parameters, trigger levels, and contingency planning with consideration of the NZ Drinking Water Standards and the Australian and NZ Guidelines for Fresh and Marine Water Quality (ANZG); and management plan requirements for future landfill consents, including provision for consultation with and notification to Watercare.
120.18	Watercare Services Limited	Amend the matters of discretion in I617.8.1 (new text underlined) as follows: "2. For other discharges from all restricted discretionary activities (A7): ... <u>x. the ability to avoid adverse effects on the water quality and quantity of the Regional Aquifer supplying municipal water.</u> "
120.19	Watercare Services Limited	Amend the assessment criteria in I617.8.2 (new text underlined, deleted text struckthrough) as follows: "The Council will consider the relevant assessment criteria below for restricted discretionary activities: 1. Potential adverse effects (including cumulative effects) are appropriately minimised or mitigated <u>avoided</u> , taking into consideration the following"..."

Discussion

809. Watercare Services Limited ('Watercare') has concerns around PC42 due to potential adverse effects on the water quality and quantity of the Waitemata regional groundwater aquifer. Watercare's key concern is to ensure that its northern water supply sources are protected, and its ability to provide a reliable, safe and efficient municipal water supply to Warkworth, Wellsford and other northern towns now and in the future is not compromised.

810. Watercare currently draws on the regional aquifer to service Warkworth's municipal water needs. Wellsford's municipal water is currently drawn from the Hōteio River, however this is not a suitable long-term option given Wellsford's projected population growth. Watercare has investigated alternative options that will allow it to continue to supply Wellsford and has decided to develop a new bore to extract water from the regional aquifer. Investigation of bore locations is currently underway. The security and safety of the groundwater aquifer is therefore of high importance to Watercare, for both short- and long-term water supply to Auckland's northern towns.
811. I agree with the submissions of Watercare based on the reasons outlined in their submission. The Regional Policy Statement requires that discharges of contaminants into water from subdivision, use and development avoid where practicable, and otherwise minimise, adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply (B7(7)(e)). The proposed precinct must give effect to the Regional Policy Statement and therefore the provisions in the precinct need to be amended to provide scope to decline a resource consent application where it could adversely affect the aquifer.
812. The National Environmental Standards for Sources of Human Drinking Water (2008) (see section 10.3.3 of this report) also require the council to decline discharge or water permits that are likely to result in community drinking water becoming unsafe for human consumption following existing treatment. It also requires the council to place conditions on relevant resource consents that require notification of drinking water suppliers if significant unintended events occur (e.g. spills) that may adversely affect sources of human drinking water.
813. As it is currently drafted, Watercare considers that the proposed precinct provisions provide insufficient recognition and protection of the aquifer, both in terms of potential contamination and risk to the recharge of the aquifer. These shortcomings give rise to concern that the municipal water supply for Warkworth, Wellsford and other northern towns is not adequately protected as required under the NES:DW and the Regional Policy Statement.
814. I support the follow changes to the proposed precinct text to meet the relief sought by Watercare:

Add a paragraph to the precinct description:

The precinct anticipates that future landfill activities may utilise the Waitemata Regional Aquifer for water supply. Watercare uses (or has plans to use) the Waitemata Regional Aquifer to provide municipal water supply to the rapidly growing towns Warkworth, Wellsford and other northern towns. The precinct provisions protect this aquifer from potential contamination or adverse water quantity effects that may compromise this municipal water supply, and through that the health and wellbeing of the residents of these towns. The objectives and policies of this precinct require an assessment of potential adverse effects on this aquifer and for future landfill activities to avoid adverse effects on the aquifer.

Add a new objective:

Adverse water quality and quantity effects on the Waitemata Regional aquifer from activities within the precinct are avoided.

Amend the existing policies:

1.Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation where it does not result in unacceptable adverse effects.

...

3.Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:

...

~~d. adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply; and~~

...

X. Activities within the precinct shall avoid any adverse effects on the water quality and quantity of the Waitemata Regional aquifer that provides water for domestic and municipal supply.

Amend the notification section:

I617.5 Notification

...

2. Any application under Rule I617.4.1 (A1), (A2), (A3), (A4), (A5), (A7) or (A15) will be publicly notified.

...

Add new matters for discretion and amendments to assessment criteria:

2. For other discharges from all restricted discretionary activities (A7):

X. The ability to avoid adverse effects on the water quality and quantity of the Regional Aquifer supplying municipal water

...

Discharges to land and water from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

1. Potential adverse effects (including cumulative effects) are appropriately ~~minimised or mitigated~~ avoided, taking into consideration the following:

...

Amend activity (A3) to provide clarification:

(A3)	Discharges to land and water from landfills in Sub-precinct A that are otherwise categorised as non-complying <u>in Chapter E13</u>	D
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Amend activity (A15) to provide clarification:

(A15)	Any landfill activity that does not comply with the restricted discretionary or discretionary activity standards in I617.6	NC
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815. While I support the proposed changes of Watercare to Policy 6, analysis through other sections of this report has led to my recommendation to delete this policy. I believe that the deletion of this policy will meet the relief sought by Watercare.

816. I support the intent of the submission to add new restricted discretionary and discretionary standards to the proposed precinct. However, in my view these would be

better suited to coming under the Special information requirements section of the precinct, as outlined below:

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.X Discharges to water

- ~~(1) All applications must be accompanied by a water monitoring plan, including detail on frequency, parameters, trigger levels, and contingency planning with consideration of the New Zealand Drinking Water Standards and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG).~~
- ~~(2) All applications must be accompanied by evidence to demonstrate that Watercare has been notified about the proposal the outcome of consultation with Watercare.~~

817. With regards to Watercare's submission seeking clarification that the provisions of *Chapter E2 - Water quantity, allocation and use* continue to apply within the precinct, I propose the amendment below to the precinct text to clarify the matter:

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, ~~except where there is a conflict, in which case these objectives take precedence.~~ – with the exception of the following:

- Objectives ...

...

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, ~~except where there is a conflict, in which case these policies take precedence.~~ In particular, ~~policy I617.3(3) is intended to take precedence over E13.3(4).~~ – with the exception of the following:

- Policy E13.3(4)
- ...

818. I note that the Unitary Plan is already quite clear through C1.6(4) that only activities that are replicated in the precinct take precedence over the activity status in the zone. Therefore, I do not consider any text changes are required to the activity table.

Recommendation

819. I recommend that submissions 120.5, 120.6, 120.7, 120.8, 120.10, 120.11, 120.12, 120.13, 120.14, 120.16, 120.18 and 120.19 **be accepted** and any further submissions be determined accordingly.
820. I recommend that submissions 120.1, 120.2, 120.3, 120.4, 120.9, 120.15, 120.17 **be accepted in part** insofar as the amendments above and in **Attachment 1** meet the relief sought, and any further submissions be determined accordingly.

14.5. Submissions to precinct provisions relating to potential effects on gas pipeline infrastructure

821. The following submissions relate to First Gas Ltd's pipeline infrastructure in the vicinity of the proposed Auckland Regional Landfill precinct. The submissions either seek changes to the proposed precinct or support the precinct provisions as notified:

Sub point	Submitter	Summary of submission point
85.1	First Gas Limited	Add a new objective which states "The Auckland Regional Landfill recognises the importance of the existing pipeline infrastructure as assets which are regionally and nationally significant and will ensure that they are protected and enabled"
85.2	First Gas Limited	Amend I617.2 as follows (new text underlined) "The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, except where there is conflict, in which case these objectives take precedence <u>excepting those objectives contained with Chapters B3 and E26.</u> "
85.3	First Gas Limited	Add a new policy which states "The Auckland Regional Landfill is designed, constructed, upgraded, and operated so that adverse effects on existing infrastructure are avoided or mitigated."
85.4	First Gas Limited	Amend I617.3 as follows (new text underlined) "The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is conflict, in which case these policies take precedence <u>excepting those policies contained with Chapters B3 and E26.</u> "
85.5	First Gas Limited	Support the retention of activities A4, A5 and A15 in the precinct table as notified
85.6	First Gas Limited	Amend I617.6.1 and I617.6.2 to include the standard "Any activity within 20m of existing infrastructure shall require the written authorisation from the infrastructure asset owner."

Discussion

822. The submissions from First Gas Limited relate to the high-pressure natural gas transmission pipeline that crosses through the proposed precinct. The pipeline is located at the far western end of the property. This pipeline is a part of a network which conveys natural gas between Auckland and Whangarei and is the communities' only source of natural gas.
823. The gas pipeline, and the petroleum pipeline that runs parallel to it are both designated in the Unitary Plan:
- Taupaki to Topuni Gas Pipeline, First Gas Limited (9101)
 - Petroleum Pipeline - Rural Section, New Zealand Refining Company Ltd (6500)
824. Under s176(1)(b) of the RMA the effect of the designation is that no person (including the landowner) may use, subdivide, or change the character, intensity or scale of the use of land within the designated area of the pipelines, without first having the written consent of the requiring authorities (First Gas Limited and New Zealand Refining Company Limited)
825. I also note that the Unitary Plan also contains an Emergency Management Area Control – New Zealand Refining Pipeline. This is covered by *Chapter E29 – Emergency management area – Hazardous facilities and infrastructure* which requires that any application for resource consent for an activity sensitive to hazardous facilities and infrastructure (including controlled activities) located within 34m of the boundary of designations 6500 and 6501 where the pipeline is constructed to a "thin wall" specification will be subject to the normal tests for notification under the RMA.
826. The designations and the Emergency Management Area Control are shown on Figure 18 below where the pipeline(s) intersect with the proposed precinct.



Figure 18 - Map of the gas and petroleum pipelines: Designations and the Emergency Management Area Control in relation to the proposed Auckland Regional Landfill precinct.

827. I agree with the two submissions that seek for an objective and policy be added around avoiding adverse effects on infrastructure. This is because the importance of the pipeline(s) to the national economy as was demonstrated in 2017 when the adjacent petroleum pipeline was ruptured by a digger. An inquiry into this incident concluded, amongst other things, that more could be done to protect the infrastructure and prevent damage to it. The inquiry also concluded that there is a case for expanding the legal protection of the pipeline(s) using the tools in the RMA (e.g. potentially to increase the land area covered by the designation)⁹⁹.

828. While I agree with the addition of the objective and policy to the precinct, in my view the policy should be reworded slightly differently to that proposed in the submission of First Gas Limited. I consider that the policy should be more specific about the pipeline(s) rather than referring to general infrastructure. My proposed change to the submitter's wording of the new policy is below:

The Auckland Regional Landfill is designed, constructed, upgraded, and operated so that adverse effects on existing regionally and nationally significant pipeline infrastructure assets are avoided or mitigated.

829. I note the submitter's support for activities (A4), (A5), and (A15) and I do not recommend any changes to these.

830. Based on the discussion above around the inquiry into the 2017 pipe rupture, I also support the submission seeking a new standard be added requiring the written approval of First Gas prior to any activity being within 20m of the pipeline. However, again I consider that the wording of the standard needs to be more specific to the pipeline(s). The current generic word "infrastructure" would mean that any activity within 20m of SH1 would require the written approval of NZTA which I do not consider necessary (obviously any access onto SH1 *would* require NZTA approval). My proposed change to the submitter's wording of the new standard is below:

Any activity within 20m of the existing gas and petroleum pipelines infrastructure shall require the written authorisation from the infrastructure asset owner

831. Submissions 85.2 and 85.4 seek that wording be added to the precinct to specifically note that any objectives and policies in the precinct do not over-ride those in Chapter B3 – Infrastructure, transport and energy and Chapter E26 – Infrastructure. Firstly, the precinct objectives and policies cannot over-ride Chapter B3 as it is part of the Regional Policy Statement to which the district and regional plan must give effect to.

832. With regards to Chapter E27, I support the intent of the submission but in my view the same outcome can be achieved through a different approach which would also clarify the situation for other underlying Unitary Plan chapters. That is, the wording in the precinct be deleted and replaced as shown below:

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, ~~except where there is a conflict, in which case these objectives take precedence.~~ – with the exception of the following:

- Objectives ...

...

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, ~~except where there is a conflict, in which case these policies take~~

⁹⁹ Elena J Trout (Chair) and Dr Roger Blakeley, Final Report of the Government Inquiry into the Auckland Fuel Supply Disruption, August 2019 (<https://www.dia.govt.nz/Auckland-Fuel-Line---Final-Report#Contents>)

~~precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4). – with the exception of the following:~~

- Policy E13.3(4)
- ...

833. As there are very few objectives and policies that the precinct intends to over-ride, I consider the above format is a clearer method to state this.

Recommendation

834. I recommend that submissions 85.1, 85.3, 85.5 and 85.6 **be accepted** and submissions 85.2 and 85.4 **be accepted in part** insofar as the relief is address through the alternative amendments above, and any further submissions be determined accordingly.

14.6. Submissions to precinct provisions relating to long-term management

835. The following submissions seek changes to the proposed Auckland Regional Landfill precinct regarding the long-term management of the potential landfill:

Sub point	Submitter	Summary of submission point
15.1 (a)	Kaipara District Council	Add criteria to I617.9 ... (including possible compensation or bond amounts) when considering a resource consent for a landfill.
15.3 (b)	Kaipara District Council	Add criteria to I617.9 to require further information that assesses the potential economic effects on the Kaipara economy - particularly...the potential clean-up costs associated with a catastrophic event.
100.3	David Bruce Mason	Amend the plan change provisions so that Waste Management NZ retains full responsibility for the site until the flow of leachate and methane has been demonstrated to be permanently finished.
100.6	David Bruce Mason	Amend the plan change provisions so that methane and leachate are determined to have ceased when they have returned to background levels for 24 months continuous.
100.7	David Bruce Mason	Amend the plan change provisions so that a fund to facilitate ongoing maintenance in perpetuity is provided based on external advice of its size once the maintenance costs are fully identified.
100.8	David Bruce Mason	Amend the plan change provisions so that a bond (separate from the fund) is provided to remediate unexpected events (using external risk management advice).

Discussion

836. Some of the submissions of Kaipara District Council and David Bruce Mason (15.1, 100.3, and 100.8) seek that a bond requirement be added to the precinct. The Kaipara District Council submission seeks that this be done through criteria. I generally agree with these submissions for the reasons outlined in section 11.17 of this report. However, as a new landfill is a discretionary activity in the precinct, there are no matters of discretion or assessment criteria. Therefore, my recommended amendment to the precinct is to add in a policy to require a bond.

837. Other submissions of Kaipara District Council and David Bruce Mason (15.3, 100.3, 100.6 and 100.7) seek changes to the precinct that in my view are too detailed and are more suited to being considered at the resource consent stage.

Recommendation

838. I recommend that submissions 15.1(a) and 100.8 **be accepted** to the extent that the amendments in section 11.17 of this report, and any further submissions be determined accordingly.
839. I recommend that submissions 15.3(b), 100.3, 100.6, and 100.7 **be rejected** and any further submissions be determined accordingly.

14.7. Submissions to amend precinct provisions to address local amenity issues

840. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to address local amenity issues:

Sub point	Submitter	Summary of submission point
24.2	William Foster	If the plan change is not declined, as alternative relief the plan change should be amended to provide fair and sufficient mitigation and compensation (as outlined in the submission) to communities in the proposed area.
45.10.	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on communities in close proximity to the landfill, in relation to traffic, amenity, odour and noise.
132.9	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on communities in close proximity to the landfill, in relation to traffic, amenity, odour and noise.
399.1	Jennifer Lynn Driskel	Restrict the hours of operation
399.2	Jennifer Lynn Driskel	Shift bin exchange further into site to reduce noise
405.2	Malcolm Lea	Require local community group to be liaised with by WMNZ on operational aspects

Discussion

841. The submission of Malcolm Lea requests that WMNZ liaise with a local community group around operational aspects of a landfill. I generally agree with the intention of this submission and I recommend that the precinct provisions be amended to require the Special information requirements to include that a Community Liaison Group be established. My recommended amendments to the precinct are shown below (new text underlined, deleted text struck through) and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.
842. The rest of the submissions in this section deal with potential changes to a landfill application to minimize the impacts on the local community through changes to the layout and design, and in one submission through compensation. In my view these are detailed matters that a better addressed through a resource consent process than plan provisions.

1617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

1617.9.1 New Landfills

- (1) Any application for a new landfill under rules 1617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS

...

INITIAL CONSTRUCTION

...

In preparing and implementing the Landfill Management Plan the applicant must consult with a Community Liaison Group established for the Auckland Regional Landfill comprising representatives from:

- Adjacent landowners
- Community groups representing the communities of Wellsford, Warkworth, Mangakura, or other nearby areas
- Recreational users of the Mahurangi Forest
- Recreational users of the Hōteu River and Kaipara Harbour
- Commercial users of the Hōteu River and Kaipara Harbour

The initial members of the Community Liaison Group must be agreed to by Auckland Council and the membership can be reviewed at any time with the agreement of Auckland Council. The Community Liaison Group is to meet regularly throughout the life of the landfill to be informed of the landfill operations and to provide feedback on any issues affecting the community regarding the landfill.

Recommendation

843. I recommend that submission 405.2 **be accepted** to the extent outlined in the recommended amendments to the precinct above, and any further submissions be determined accordingly.

844. I recommend that submissions 24.2, 45.10, 132.9, 399.1, and 399.2 and **be rejected**, and any further submissions be determined accordingly.

14.8. Submissions to precinct provisions around cultural issues

845. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to address cultural issues:

Sub point	Submitter	Summary of submission point
35.2 (a)	Environs Holding Ltd environmental subsidiary of Te Uri o Hau Settlement Trust	If the plan change is not declined, as alternative relief the plan change should be amended to address ... cultural ... mitigation, offsetting, and compensation.
45.4	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the exercise of kaitiakitanga by mana whenua iwi, hapū and whānau.
45.5	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on future generations.
45.6	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the exercise of rāhui by mana whenua iwi, hapū and whenua.

132.3	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the exercise of kaitiakitanga by Ngāti Whātua iwi, hapū and whānau.
132.4	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on future generations of Ngāti Whātua people.
132.5	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the exercise of rāhui by Ngāti Whātua iwi, hapū and whenua.
146.2(a)	Leihia Wilson	If the plan change is not declined, as alternative relief the plan change should be amended to address ... cultural ... mitigation, offsetting, and compensation.
398.2	Tinopai Resource Management Unit	If PC42 is not declined, then amend to address cultural mitigation, offsetting, and environmental compensation of adverse cultural and other effects on Te Rūnanga o Ngāti Whātua

Discussion

846. The potential effects on cultural issues are addressed in sections 11.1 and 14.1.10 of this report. I acknowledge the cultural effects raised by these submissions. It is clear that in a Māori worldview paradigm, a potential landfill under PC42 could have effects on concepts such as mauri, Papatūānuku, kaitiakitanga, rāhui, and mana that are real. Therefore, these effects need to be considered in the assessment of PC42.
847. I consider that the current objectives and policies of the precinct as proposed by WMNZ will address some of the concerns of outlined in these submissions. However, in addition to these provisions I recommend that further modifications to the precinct is required. These recommendations are included in section 11.1 of this report.

Recommendation

848. I recommend that submissions 35.2 (a), 45.4, 45.5, 45.6, 132.3, 132.4, 132.5, 146.2(a), and 398.2 **be accepted** to the extent shown in the recommended precinct amendments in section 11.1 of this report, and any further submissions be determined accordingly.

14.9. Submissions to precinct provisions relating to ecology

849. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to address ecological issues:

Sub point	Submitter	Summary of submission point
15.1(b)	Kaipara District Council	Add criteria to I617.9 to ensure that any potential effects on the Kaipara Harbour (including sedimentation and leachate) are the matter of further research and reporting (including possible compensation or bond amounts) when considering a resource consent for a landfill.
35.2 (b)	Enviros Holding Ltd envt subsidiary of Te Uri o Hau Settlement Trust	If the plan change is not declined, as alternative relief the plan change should be amended to address the environmental effects (outlined in the submission) as well as ... environment mitigation, offsetting, and compensation.
45.3	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the whenua and awa of the Kaipara Harbour.

45.7	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the terrestrial, aquatic and estuarine environments.
66.2	Jodi Ellis	Riparian planting needs to be increased to 500 metres along the Hōteō River regardless of who owns the land
111.3	Alistair de Joux	If the plan change is not declined, changes should be made to protect the full root zone of large significant trees (that could be damaged by roading activities).
111.4	Alistair de Joux	If the plan change is not declined, the ecological benefits and compensation package should be increased, to require an exemplary programme of forest management to incorporate: harvesting the commercial pine plantation with a way which will minimise hydrological impacts of clear felling, management of wattle forest with the aim of eventually restoring these areas to native vegetation and habitat, and full conservation of the pine plantation to permanent native forest.
132.2	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the whenua and awa of the Kaipara Harbour.
132.6	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on the terrestrial, aquatic and estuarine environments.
146.2 (b)	Leihia Wilson	If the plan change is not declined, as alternative relief the plan change should be amended to address the environmental effects (outlined in the submission) as well as ... environment mitigation, offsetting, and compensation.
148.4	Department of Conservation	If the plan change is not declined, then a clear rationale needs to be provided for Sub-precinct 2.
148.5	Department of Conservation	If the plan change is not declined, the tests that are applied to activities within waterbodies and their margins (and Natural Stream Management Areas) should not be relaxed.
148.6	Department of Conservation	If the plan change is not declined, then the boundaries of the areas of ecological significance within the site should be subject to being redrafted based on ground-truthed assessments.
148.7	Department of Conservation	If the plan change is not declined, then the provisions should reflect that in some instances avoidance of adverse effects is required to protect values and should not be subject to caveats.
148.8	Department of Conservation	If the plan change is not declined, then it should be amended so that it is not at the applicant's discretion to decide whether residual adverse effects are compensated.
148.9	Department of Conservation	If the plan change is not declined, further justification is required as to why the overarching provisions in the Unitary Plan (e.g. ecology) are not appropriate for the precinct.
378.2	Aotearoa (NZ) Sustainability Foundation	If PC42 is not declined, then amend to be consistent with the points raised in submission.

Discussion

850. The submission of Jodi Ellis seeks riparian planting increased a depth of 500m along the Hōteō River. The specifics of the submission are not clear. It is not clear why riparian planning requirements should be included in the precinct plan. It is noted that approximately 3km of the Hōteō riparian margin within the precinct site is proposed to be planted as environmental

compensation measures as part of the resource consent application (as required by the Overseas Investment Office (OIO) agreement: Special Condition 4(9)).

851. The submissions of the Department of Conservation (148.4 and 148.5) that oppose Sub-precinct 2 are supported. As addressed in the Freshwater ecology section of this report, the proposed discretionary activity status for reclamation and drainage in the Natural Stream Management Area of sub-precinct B is not supported.
852. The submission of the Department of Conservation (148.6) seeks that the boundaries of the SEAs be redrafted based on if the landfill goes ahead. Due to the large subject site, as well as the wetland habitat and fauna values present (which are not currently mapped as SEA), the council's Freshwater ecologist Mr. Lowe supports the revision of SEA boundaries based on updated field assessments. I agree with Mr. Lowe's view. I recommend that this be included in the precinct as below:

1617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

1617.9.3 New Landfills and Discharges to air, land or water

...

(X) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of the ecological values of the Precinct in accordance with the provisions in B7.2.2.

...

853. There are 11 submissions that seek changes to the precinct to address environmental effects, mitigation, offsetting and compensation. The management of effects under the RMA can be represented as a continuum of responses: avoidance, mitigation and remediation, offsetting, environmental compensation, and lastly other forms of compensation.
854. This hierarchical approach to managing effects is further supported by the Unitary Plan policies and objectives, including objective E3.2.3. The proposed precinct provisions could be strengthened by removing the policies that are not in alignment with the effects hierarchy.
855. Furthermore, it is acknowledged that one of the principles underpinning best practice offsetting is that of 'limits to offsetting', whereby an offset may be inappropriate if the residual impacts cannot be fully managed because of the irreplaceability or vulnerability of the biodiversity affected; or there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes.
856. The provision of weaker provisions in the precinct than in the existing Unitary Plan provisions for the reclamation of fauna habitat (i.e. Hochstetter's frog habitat, avifauna habitat) via wetlands and streams is not considered appropriate. This is addressed in section 11.2 of this report.
857. Some of the requests in these submissions around environmental mitigation and enhancement are more appropriately considered at the resource consent stage.

Recommendation

858. I recommend that submissions 15.1(b), 35.2 (b), 45.3, 45.7, 132.2, 132.6, 146.2(b), 148.4, 148.5, 148.7, 148.8, 148.9, and 378.2 **should be accepted in part** to the extent that the amended outlined in sections 11.2 and 11.3 of this report meet their relief, and any further submissions be determined accordingly.
859. I recommend that submissions 66.2, 111.3, 111.4, and 148.6 **be rejected** and any further submissions be determined accordingly.

14.10. Submissions to precinct provisions relating to climate change

860. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to address potential effects on climate change:

Sub point	Submitter	Summary of submission point
45.8	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on climatic destruction.
132.7	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on climatic destruction.

Discussion

861. Section 10.7.4 of this report and **Attachment 10** go into detail around how, at present, s70A of the RMA specifically prohibits Auckland Council from making rules in the Unitary Plan regarding or considering the climate change effects of any greenhouse gas emissions.
862. Therefore, I have no scope to further consider these submissions.

Recommendation

863. I recommend that submissions 45.8 and 132.7 **be rejected** and any further submissions be determined accordingly.

14.11. Submissions to precinct provisions relating to landscape effects

864. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to address potential landscape effects:

Sub point	Submitter	Summary of submission point
45.9	Ngāti Whātua Ōrākei	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on natural character and landscape.
132.8	Te Rūnanga o Ngāti Whātua	If the plan change is not declined, then substantial amendments to the description, objectives, policies, methods, and rules to address adverse effects on natural character and landscape.

Discussion

865. The above submissions seek that the precinct be amended to address adverse effects on natural character and landscape. The landscape, natural character and visual effects of PC42 are addressed more fully in sections 11.15 and 14.1.12 of this report.

866. I agree with Mr Kensington's conclusion in section 11.15 of this report the low number of localised viewing audiences, in addition to the mitigating elements of viewing distance and the dynamic rural environment context for other viewers, mean that the any landscape and visual effects from a potential landfill could be adequately assessed and addressed at the resource consent stage.
867. However, I have recommended some additional provisions in the precinct as summarised below:
- an additional policy be included within the precinct wording to ensure the successful integration of future buildings and structures into the landscape
 - a minor change to the precinct wording to strengthen the intent to avoid adverse effects from any future landfill activity on areas of identified Outstanding Natural Landscape within the proposed precinct
 - an amendment to the precinct wording to require an 'Ecological and Landscape Enhancement and Restoration Plan', covering landscape management initiatives to address actual and potential landscape and visual effects.
868. These recommended changes to the precinct are shown in section 11.15 and also in **Attachment 1** where the full precinct provisions are shown with the recommended amendments.
869. I note that Mr Kensington states that he is currently unable to provide any advice on the potential cultural landscape effects without further understanding of this potential issue. This information may be provided in evidence at the hearing to allow for informed consideration and further assessment.

Recommendation

870. I recommend that submissions 45.9 and 132.8 **be accepted** to the extent set out in the amendments to the precinct in section 11.15 of this report, and any further submissions be determined accordingly.

14.12. Submissions to precinct provisions relating to scale of the landfill

871. The following submissions seek changes to the proposed Auckland Regional Landfill precinct to limit the scale of a potential landfill:

Sub point	Submitter	Summary of submission point
111.2	Alistair de Joux	If the plan change is not declined, a smaller landfill (below 25m tonnes) should be considered.
111.5	Alistair de Joux	If the plan change is not declined, there should be a limit imposed for the future catchment areas (i.e. where waste comes from) for the landfill.
148.2	Department of Conservation	If the plan change is not declined, any precinct should not cover the whole site as "landfill" but be identified at a more appropriate scale and avoid Natural Stream Management Areas, Wetlands Management Areas, and Significant Ecological Areas.
356.2	Rupert Harvey Mather	Reduce the size of the area to be zoned [precinct area]
356.3	Rupert Harvey Mather	Reduce capacity of landfill and number of users
356.4	Rupert Harvey Mather	Have a defined life expectancy of the operation

Discussion

872. The submissions of Alistair de Joux and Rupert Harvey Mather (356.3 and 356.4) seek reductions of the size, catchment area, capacity, and life expectancy of a potential landfill in the proposed precinct.
873. In my view, these submissions cover more detailed matters that are better considered at the resource consent stage. While the standards of the proposed precinct set an upper volume limit for a landfill (28.5 Mm³), the exact size, catchment area, capacity, and life expectancy of a potential landfill are best dealt with through a resource consent.
874. The submissions of the Department of Conservation and Rupert Harvey Mather (356.2) seek that the precinct area be reduced so that the whole site is not identified as a landfill.
875. In my view, the size of the precinct is one of its key strengths in that the majority of the precinct is a buffer area to separate it from surrounding activities. It is only Sub-precinct A in which the precinct provides for a landfill to be located so the 'landfill' part of the precinct is only 120ha of the total 1,020ha. The precinct provisions as recommended to be modified in this report further strengthen the role of the precinct land outside of Sub-precinct A to be a buffer area.

Recommendation

876. I recommend that submissions 111.2, 111.5, 148.2, 356.2, 356.3, and 356.4 **be rejected** and any further submissions be determined accordingly.

14.13. Submissions to precinct provisions relating to operational matters

877. The following submissions seek changes to the proposed Auckland Regional Landfill precinct relating to operational matters:

Sub point	Submitter	Summary of submission point
100.2	David Bruce Mason	Amend the plan change provisions after further technical work to establish the appropriate ARI, the size of the associated rainfall event, and the capability of the proposed design to accommodate such an event.
100.4	David Bruce Mason	Amend the plan change provisions to ensure there are minimum periodic maintenance requirements for the grass cap.
100.5	David Bruce Mason	Amend the plan change provisions so that storm water defences used for the live phase of the landfill can be retained to screen physical debris from flowing downstream.
148.3	Department of Conservation	If the plan change is not declined, then the use of the term "landfill" should be reconsidered as it may hinder other waste management related activities (e.g. waste sorting for reuse).
405.1	Malcolm Lea	Require management plans of all aspects

Discussion

878. The submissions of David Bruce Mason deal with detailed operation and design matters that are better addressed in a resource consent application. It would not be appropriate for the proposed precinct to address this level of detail.
879. The submission from the Department of Conservation seeks that the term 'landfill' not be used as it may limit other waste management related activities such as waste sorting for

reuse. While I understand the intention of this submission, I consider that the term 'landfill' is appropriate as it is a defined term under the Unitary Plan in *Chapter J – Definitions*. It is also not clear that this site would be an appropriate site for other waste management activities such as the sorting of waste. I consider that for efficiency reasons a waste management facility (such as a sorting centre) is likely to need to locate closer to where most waste is generated (i.e. Auckland).

880. The submission of Malcom Lea requests management plans for all aspects of the landfill. I agree with this submission and I recommend adding wording to the Special information requirements section of the proposed precinct requiring that management plans must accompany applications for landfills and discharges from landfills. The recommended wording is below and is also shown in **Attachment 1**. Some of the detailed information below is from recommendations in other sections of this report but is shown here in full.

1617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

1617.9.1 New Landfills

- (1) Any application for a new landfill under rules 1617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS:

- Bin Exchange Area Management Plan
- Site Emergency Management Plan
- Landfill Gas Management Plan
- Erosion and Sediment Control Plan
- Industrial and Trade Activities Management Plan
- Stormwater Management Plan
(demonstrating: location and extent of infrastructure including areas of on-site stormwater management; staging of development; functionality of stormwater treatment and mitigation systems throughout all phases including aftercare; and an assessment of downstream flooding, erosion impacts and appropriate mitigation measures)
 - Stormwater Operation and Maintenance Plan
 - Stormwater Monitoring and Contingency Plan
- Groundwater Monitoring and Contingency Plan
- Leachate Monitoring and Contingency Plan
- Landscape Mitigation and Management Plan
- Ecological Enhancement and Restoration Plan
- Ecological Enhancement Pest Management Plan
- Off-Site Stream Compensation Plan (potentially)
- Public Access Plan
- Noise Management Plan
- Odour Management Plan
- Dust & Litter Control Plan
- Pest Control Plan
- Community Engagement Plan
- Iwi Engagement Plan
- Complaints Process, Recording, and Reporting
- Hazardous Substances Management Plan
- Aftercare Management Plan
 - Closure and Final Capping
 - Aftercare and End Use

INITIAL CONSTRUCTION:

- Construction Environmental Management Plan
- Construction Erosion and Sediment Control Plan
- Construction Traffic Management Plan
- Construction Noise and Vibration Management Plan
- Vegetation Management Plan
- Fauna Management Plan
 - Bat Management Plan (BMP) a
 - Avifauna Management Plan
 - Lizard Management Plan
 - Hochstetter's Frog Management Plan
- Native Freshwater Fish and Fauna Management Plan
 - Invertebrate Management Plan
 - Streamworks Management Plan

(2) In preparing and implementing the Landfill Management Plan the applicant must consult an Iwi Liaison Group established for the Auckland Regional Landfill comprising mana whenua.

(3) In preparing and implementing the Landfill Management Plan the applicant must consult with a Community Liaison Group established for the Auckland Regional Landfill comprising representatives from:

- Adjacent landowners
- Community groups representing the communities of Wellsford, Warkworth, Mangakura, or other nearby areas
- Recreational users of the Mahurangi Forest
- Recreational users of the Hōteu River and Kaipara Harbour
- Commercial users of the Hōteu River and Kaipara Harbour

The initial members of the Community Liaison Group must be agreed to by Auckland Council and the membership can be reviewed at any time with the agreement of Auckland Council. The Community Liaison Group is to meet regularly throughout the life of the landfill to be informed of the landfill operations and to provide feedback on any issues affecting the community regarding the landfill.

Recommendation

881. I recommend that submission 405.1 **be accepted** and any further submissions be determined accordingly.

882. I recommend that submissions 100.2, 100.4, 100.5, and 148.3 **be rejected** and any further submissions be determined accordingly.

14.14. Submissions seeking the site be used for water collection

883. The following submissions seek that the land subject to PC42 be used for water collection rather than a landfill:

Sub point	Submitter	Summary of submission point
29.2	Matt Lomas	Convert the site to water reservoirs.
84.2	Sylvia Taylor	The site should instead be used for a dam harvesting water.

Discussion

884. The two submissions above seek that the land that is proposed to be subject to the Auckland Regional Landfill be instead used for water reservoirs. It is argued that the site would be

suitable for such a use and the current water shortage in Auckland proves that further water sources such as this are needed. It is noted that this idea was mentioned in passing in a number of other submissions, but not expressly sought as relief as these two submissions did.

885. In assessing these submissions, my view is that they are out of scope of PC42. This is because these submissions are not 'on' the plan change. The issue of scope is required to be tested because of the wording in the RMA. The right to make a submission on a plan change is conferred by clause 6(1) of Schedule 1 of the RMA which states that persons described in the clause *'may make a submission on it'*. If the submission is not 'on' the plan change, the decision maker has no jurisdiction to consider it.
886. I consider that these two submissions are not 'on' PC42 as PC42 itself does not propose anything to do with using the site for water reservoirs.
887. However, irrespective of whether these submissions are in scope or not, I consider that these submissions should be rejected. This is because it is the role of Watercare to identify the future water demands for Auckland and plan for how to provide for them. If there are sites in this area required by Watercare for water reservoirs then it can designate them for this purpose. The land subject to PC42 is not covered by any designations or notices of requirement from Watercare. I also note that the submission from Watercare (#120) on PC42 does not mention the need of this land for water reservoirs.

Recommendation

888. I recommend that submissions 29.2 and 84.2 **be rejected** and any further submissions be determined accordingly.

14.15. Submissions seeking further historic heritage work be undertaken within the precinct

889. The following submissions seek that further heritage assessment is undertaken within the proposed precinct.

Sub point	Submitter	Summary of submission point
139.1	Heritage New Zealand Pouhere Taonga	Complete an assessment to establish the age of the cottage and farm building to determine the presence of any 19th century structural elements of archaeological and heritage values.
139.2	Heritage New Zealand Pouhere Taonga	Assess the cottage and farm building in relation to broader historic heritage values.
139.3	Heritage New Zealand Pouhere Taonga	Record any heritage features on the Auckland Council Cultural Heritage Inventory and (for any pre-1900 features) recorded as an archaeological site on the NZ Archaeological Association database.

Discussion

890. The submissions from Heritage New Zealand Pouhere Taonga seek that further heritage assessment is undertaken on a cottage and farm building on the site. As discussed in the historic heritage section of this report, this further work is appropriate at the plan change stage. However, if the applicant does not provide this through evidence at the hearing then the precinct should be modified to require this assessment to be done when the first resource consent for a landfill is applied for under the precinct.
891. The last submission point from Heritage New Zealand Pouhere Taonga seeks that any heritage features found within the precinct be recorded on the Auckland Council Cultural

Heritage Inventory and (for any pre-1900 features) recorded as an archaeological site on the New Zealand Archaeological Association database. This describes good practice for an archaeologist/historian and I do not consider that this level of detail is required to be included in the proposed precinct.

Recommendation

892. I recommend that submissions 139.1 and 139.2 **be accepted** in part, insofar as the relief in the historic heritage section of this report addresses these submissions, and any further submissions be determined accordingly.
893. I recommend that submission 139.3 **be rejected** and any further submissions be determined accordingly.

14.16. Submissions seeking a delay to the process and alternatives considered

894. The following submissions seek that alternatives to a landfill be considered and some of the submissions seek that PC42 be put on hold or delayed.

Sub point	Submitter	Summary of submission point
45.2	Ngāti Whātua Ōrākei	Provide Ngāti Whātua Ōrākei the opportunity to co-create a partnership that will assist our communities to manage waste in a way that puts Papatūānuku and our community at the centre of decision making.
132.10.	Te Rūnanga o Ngāti Whātua	Council halt discussions with WMNZ and provide iwi the opportunity to co-create a partnership that will assist our communities to manage waste in a way that puts Papatūānuku and our community at the centre of decision making.
192.2	Zoe Duffy	Find an alternative site.
192.3	Zoe Duffy	Develop a culture of waste recycling and build the industry to generate energy from waste.
193.2	Barbara Just	Investigate other options to dispose of waste.
200.2	Anna Steedman	Council should delay deciding this matter so the public can understand it better
375.1	Andrew Short	Consider alternative technologies for waste disposal
407.1	Joanne Macdonald	Find a more suitable site
407.2	Joanne Macdonald	Get pro-active regarding alternative ways to dispose of Auckland's waste
412.1	Ngāti Rango	Debate around alternatives needs to occur before this application is considered
412.2	Ngāti Rango	Include Ngāti Rango in a collective approach to addressing Auckland's long term waste management needs in a way that culture and tradition is recognised and provided for.

Discussion

895. These submissions cover a number of issues including delaying the PC42 process, addressing alternative waste management options, and looking for a more suitable site for landfill.
896. In terms of delaying the PC42 process, a full discussion around this is included in Notifications and submissions period section of this report. Fundamentally, the council has no power on its own to halt or delay the private plan change process once it has been notified. The council must follow the timelines under the RMA. There is potential for these timeframes to be extended or put on hold, but only with the agreement of the private plan change requester. WMNZ has not agreed to halt or delay the PC42 process.

897. Under the RMA, the council does have up to two years to make a decision on a private plan change once it is notified (therefore up to 26 March 2022). However, the council also has a duty to avoid unreasonable delay under section 21 of the RMA.
898. Some submissions seek that alternative waste management options (e.g. waste to energy plant) are pursued instead of the landfill. Others seek that the landfill should go to a better suited site. Both of these 'alternatives' are explored in the 'Alternative options to a Wayby Valley landfill' section of this report.
899. In short, alternative waste management options (e.g. waste-to-energy plants) are not within the scope of council's recommendation on PC42. The council does not have the authority to recommend a different project to the one applied for. In addition, the council cannot require alternative sites to be fully assessed as alternatives.

Recommendation

900. I recommend that submissions 45.2, 132.10, 192.2, 192.3, 193.2, 200.2, 375.1, 407.1, 407.2, 412.1, and 412.2 **be rejected** and any further submissions be determined accordingly.

14.17. Submissions seeking other potential environmental benefits from the landfill proposal

901. The following submissions seek that the proposed precinct be amended to enable other potential environmental benefits to occur.

Sub point	Submitter	Summary of submission point
13.2	Richard Griffiths	Council should work to reduce sedimentation of the Hōteu River and Kaipara Harbour through land purchases, reforestation, and planting river banks.
373.2	Peter Graeme Stretch	Require the applicant to build a grade 2 cycle trail that is more than 500m from the operational landfill, including access and service roads
405.3	Malcolm Lea	Require \$10 levy per metre for local environmental improvements
406.1	NZ Walking Access Commission Ara Hikoi	Require public access to be created, in particular: A walking and cycling linkage connecting Wayby Valley norther-western boundary of the precinct to Waiwhiu Valley via Wilson Road.
406.2	NZ Walking Access Commission Ara Hikoi	Require public access to be created, in particular: North-South walking and cycling linkage connecting from Wayby Valley through the ARL site to Sunnybrook Scenic Reserve

Discussion

902. The above submissions seek a range of environmental benefits to be gained from a landfill development including reforestation, the construction of cycling and walking tracks, and a levy on waste for local environmental improvements.
903. While I see the benefit in such ideas, I am mindful that positive environmental benefits such as these must be linked to a specific adverse environmental effect if they are to be used to offset or compensate for adverse effects.
904. As stated elsewhere in this report, there is a clear effects management hierarchy in the RMA, NPS:FW and UP that requires effects to be avoided in the first case, remedied where they cannot be avoided, and then mitigated where they cannot be remedied. If there are still residual adverse effects following these steps, then (and only then) can opportunities for

offsetting be put forward. If there are still residual adverse effects after offsetting then compensation could be appropriate.

905. The proposals in the submissions regarding reforestation and the construction of cycling and walking tracks could be viewed as offsetting while the levy for environmental improvements could be compensation.

906. However, in my view the proper steps through the effects management hierarchy need to be taken, rather than starting off at the offsetting/compensation steps. I also consider that there is not enough information at this stage in the process to be able to link these offsets/compensation to a specific residual adverse effect.

Recommendation

907. I recommend that submissions 13.2, 373.2, 405.3, 406.1, and 406.2 **be rejected** and any further submissions be determined accordingly.

14.18. Submissions relating to the airfield

908. The following submissions seek the airfield on the land subject to PC42 be given special provisions and protection to continue as an airfield.

Sub point	Submitter	Summary of submission point
160.1	Andrew Wallace	All of the area required to operate the private airfield should carry a separate airport precinct.
160.2	Andrew Wallace	If the plan change is not declined, amend the plan change to require the airfield to be subdivided from the rest of the property.
403.1	Lionel Foster	Require the airstrip to be subdivided from the rest of the property
403.2	Lionel Foster	Add an airport precinct over the airfield
404.1	Joshua Don	Require the airstrip to be subdivided from the rest of the property
404.2	Joshua Don	Add an airport precinct over the airfield

Discussion

909. These submissions focus on the private airstrip that is on the western side of the proposed precinct. The submissions seek that the airstrip be subdivided from the rest of the property and/or have an 'airport precinct' placed over the airstrip.

910. In my view, the requested relief in these submissions is unnecessary and would be a draconian use of the RMA. The relief is unnecessary as the proposed precinct has no impact on the current airstrip. That is, the precinct provisions do not refer to the airstrip and therefore the underlying Rural Production zone and Auckland-wide provisions apply. The relief would be draconian as it would effectively be forcing a private landowner to subdivide their land (potentially against their wishes).

911. In terms of the 'airport precinct', there is not enough detail in the submission to be able to assess this proposal.

912. I also consider that these submissions may be considered out of scope in terms of not being 'on the plan change'.

Recommendation

913. I recommend that submissions 160.1, 160.2, 403.1, 403.2, 404.1, and 404.2 **be rejected** and any further submissions be determined accordingly.

14.19. Submissions stopped roads

914. The following submissions relate to the potential for unformed public roads that traverse the precinct to be formally stopped.

Sub point	Submitter	Summary of submission point
406.3	NZ Walking Access Commission Ara Hikoi	Require that any road stopping be constrained to Valley 1 and not put forward for any part of the legal road network providing a key landscape linkage
406.4	NZ Walking Access Commission Ara Hikoi	If road stopping is granted, then suitable replacement public access must be provided (and not count as mitigation of other environmental effects of landfill)

Discussion

915. These submissions seek that the proposed precinct prevent road stopping outside Valley 1 and also require replacement public access for any road that is stopped.

916. “Road stopping” is the term given to changing land with the legal status of road to a freehold title. Road stopping occurs only where land has legal road status, which can include unformed roads (often referred to as “paper roads”). In this case, there are paper roads throughout the proposed precinct, including through Sub-precinct A (refer to Figure 19 below). To enable a landfill to be established within Sub-precinct A, WMNZ will need to apply to have the roads stopped.

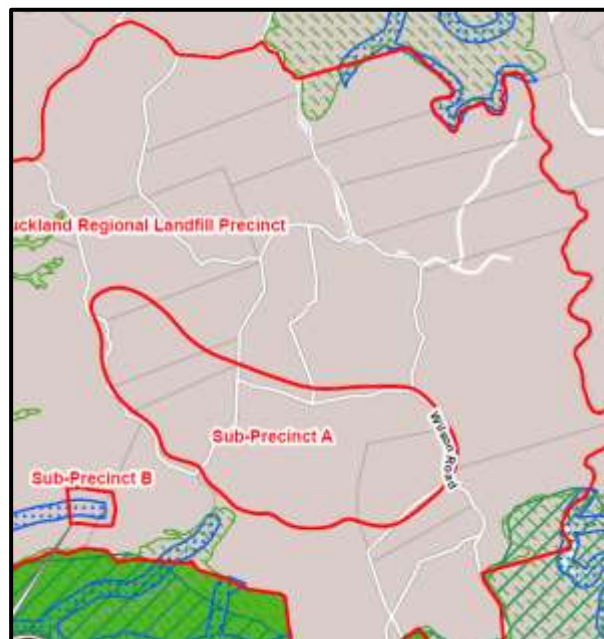


Figure 19 - Paper roads (white) in the proposed Auckland Regional Landfill precinct area

917. The road stopping process is governed by either the Local Government Act (1974) or the Public Works Act (1981). In Auckland, it is Auckland Transport that oversee the road stopping process. Approval is required from the Auckland Transport Board as well as the Minister for Land Information New Zealand (as these are rural roads). In this case it is likely that the road stopping process would be publicly notified meaning that objections could be made. If approved, WMNZ would need to purchase the land from Auckland Transport. The road stopping process can take anywhere from one to three years to conclude (depending on complexity).

918. The council raised the issue of the paper roads through the precinct in its Clause 23 further information request on 30 September 2019:

Legal roads within precinct

The proposed Landfill precinct would not apply to the legal roads within the precinct boundaries. The Auckland Unitary Plan does not zone roads (A1.6.4) and the precinct seeks to vary the underlying zone controls. As there is no zoning on the underlying roads, the precinct provisions do not apply to them.

It is also noted that Auckland Transport have a Notice of Requirement lodged with Auckland Council to designate all existing roads. The interim effect of the notice of requirement is that under s178(2) of the RMA “no person may do anything that would prevent or hinder the public work, project, or work to which the designation relates unless the person has the prior written consent of the requiring authority.”

It would be advisable for the applicant to investigate the road stopping process with Auckland Transport...Some general information on road stopping can be found at the link below.

<https://at.govt.nz/about-us/working-on-the-road/road-processes-for-property-owners/changing-the-legal-status-of-a-road/>

919. WMNZ responded to the council on 15 November 2019 as below:

“WMNZ has been consulting with Auckland Transport on the process for road stopping, including meeting with their Technical Property Services Manager. An application to stop the roads within the landfill footprint is being prepared and will be submitted shortly. This is a separate process to the private plan change application under the RMA, and will be considered under different legislation.

Following closure of the roads and amalgamation with adjacent titles, the underlying zoning and precinct provisions would apply to the Land. This is WMNZ’s preferred approach, rather than seeking agreement under s178(2) of the RMA to undertake works within the roads.

(In any event, the notice of requirement, which was lodged in 2012 and still has not been notified, expressly excludes unformed roads – see 1.C(v) of the notice of requirement – and most of the roads affected by the landfill works are unformed roads.)”

920. I consider that these submissions cannot be addressed within the scope of PC42 and the RMA as they are a process managed by other Acts. I note that during any road stopping process that WMNZ may pursue, there will very likely be an opportunity for public objections. This would be the best forum for the matters in these submissions to be addressed.

921. I do note that the road stopping process is not a straight-forward matter and it has the potential to hinder or halt the establishment of a landfill within Sub-precinct A irrespective of whether the proposed precinct is approved or a resource consent is granted.

Recommendation

922. I recommend that submissions 406.3 and 406.4 **be rejected** and any further submissions be determined accordingly.

14.20. Submissions seeking that transport of waste to the landfill be via rail

923. The following submissions seek that the precinct provisions be amended to require that rail transport is used for the landfill.

Sub point	Submitter	Summary of submission point
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124.2	Forest and Bird Warkworth Area	If the plan change is not declined, then carbon emissions should be significantly reduced by carrying as much of the waste as possible by rail.
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Discussion

924. While the same sentiment around using rail appeared in a number of submissions, this was the only submission that sought the specific relief. The submission refers to the reduction in carbon emissions as being the reason to prefer rail. However, **Appendix 10** of this report details how the RMA does not allow a proposal's effect *on* climate change to be considered. However, I do consider there is still merit in the concept of rail transport to be explored.
925. The North Island Main Trunk railway line is around 2km from the proposed precinct at their closest point. Transporting waste to the landfill via rail would certainly bring some benefits to the road network in terms of congestion, safety, and air pollution. However, without a branch line into the proposed landfill site waste would still be required to be trucked the last section to the landfill. This would likely result in double handling and inefficiencies, likely leading to higher transport costs. It is also unclear how efficient the rail network would be at the Auckland end for transporting waste.
926. However, even with the current difficulties and obstacles to achieve efficient rail transport to the landfill, the underlying idea of using rail is a worthy goal. Therefore, I recommend that the objectives and policies relating to alternative transport (which would include rail) in the Transport section of this report be added to the proposed precinct.

Recommendation

927. I recommend that submissions 124.2 **be accepted in part** insofar as the recommended amendments in the Transport section of this report meet the requested relief, and any further submissions be determined accordingly.

14.21. Submissions addressing miscellaneous issues

928. The following submissions relate to miscellaneous requests from submitters that do not easily sit within any other section of this report.

Sub point	Submitter	Summary of submission point
124.3	Forest and Bird Warkworth Area	If the plan change is not declined, then amend the conditions of consent to meet the submitter's concerns over transparency.
159.2	Shona Oliver	Extend the consent for the current landfill at Redvale
159.3	Shona Oliver	Delay the Dairy Flat Future Urban zone development
379.1	D C Webster	Clarify whether this precinct would set a precedent for other landfills

Discussion

929. The submission of Forest and Bird was on both the resource consent and PC42. This particular submission point relates to the monitoring of conditions of the resource consents and is therefore better addressed in the hearing report for the application for resource consents.
930. The submissions of Shona Oliver to delay the Dairy Flat Future Urban zone development and extend the consent for the current Redvale landfill cannot be considered further under PC42 as they are both out of scope.

931. I would note however that the Dairy Flat Future Urban zone development is anticipated¹⁰⁰ to begin sometime between 2033 and 2037. The only part of the Dairy Flat Future Urban zone that is anticipated to develop before then is the Silverdale West Dairy Flat industrial area (which would not be incompatible with the continuation of the Redvale landfill. I also note that in 2014 WMNZ sought to extend the Redvale resource consents to enable it to continue up to 2048. The application was granted, but only with an extension until 2028. The inability to continue to use Redvale in the long-term future has led to the Auckland Regional Landfill proposal by WMNZ.
932. The submission of D C Webster seeks clarification on whether the approval of PC42 would set a precedent for other landfills. In my view, the approval of the proposed precinct would not set any precedent. A precedent can only occur in 'like for like' cases and in my view, it would be difficult to replicate this proposal. The specific characteristics of the site and the tailored precinct provisions mean that this proposed precinct is an exception. The purpose of a precinct is to enable exceptions to the standard zoning provisions for site specific purposes.
933. Should another private plan change request emerge for a landfill, I do not think that any approval of PC42 would impact on the likelihood of that plan change being approved or declined. It would be assessed on its merits. I do not consider that any clarification around setting a precedent is necessary to include in the proposed precinct.

Recommendation

934. I recommend that submissions 124.3, 159.2, 159.3, and 379.1 **be rejected**, and any further submissions be determined accordingly.

15. CONCLUSIONS

935. Following the assessments I have made in sections 10, 11, and 14 of this report, I have concluded that PC42 can be approved subject to modifications.
936. Having considered the private plan change request, submissions, and the effects on the environment, I have recommended a number of changes to the precinct text and map in terms of deletions and additions. I have included a marked-up version of the Auckland Regional Landfill precinct text in **Attachment 1** and a marked-up version of the precinct map in **Attachment 2** of this report. A 'clean' version of the modified precinct is included in **Attachment 3**.
937. Further evaluation, under section 32AA of the RMA, is required for any changes that have been made to, or are proposed for, the proposal since the evaluation report for the proposal was completed. Section 32AA requires that all changes to a proposal since the original evaluation must be well justified and supported by sound information that demonstrates that the changes will be appropriate, efficient and effective.
938. All amendments to the notified PC42 proposed in this report have been assessed in accordance with section 32AA. Although not explicitly stated, the options, appropriateness, effectiveness and efficiencies that I have considered in my assessment included the proposed provisions, the amended provisions as sought by submitters, and the provisions I have proposed in each case.
939. The PC42 application included a section 32 evaluation report within the private plan change request. I adopt the applicant's section 32 evaluation report, with the exception of where it relates to the provisions that I propose amendments to.



¹⁰⁰ The Future Urban Land Supply Strategy, Auckland Council, 2017.

940. This report and any subsequent decision report from the commissioners forms part of the process required under s32AA.
941. Note that in different sections of this report I have recommended changes to the precinct text based on precinct wording from the technical specialists. Where these have created potential overlaps, conflicts, and duplication within the wider precinct, I have resolved these in **Attachment 1**. I have left the original wording in the relevant section of the report should the panel wish to agree with one of the recommended changes but not the other.

16. RECOMMENDATIONS

942. That, the Hearing Commissioners accept or reject submissions (and associated further submissions) as outlined in this report.
943. That, as a result of the recommendations on the submissions, that PC42 be **approved with modifications** and the Auckland Unitary Plan be amended by adding the Auckland Regional Landfill precinct (as amended in **Attachment 1** and **Attachment 2**) to the planning maps and Chapter I – Precincts of the Auckland Unitary Plan (Operative in Part).

17. SIGNATORIES

Role	Name and title of signatories
Author	Ryan Bradley, Principal Planner – Plans and Places 
Reviewer / Approver	Peter Vari, Team Leader – Plans and Places 

ATTACHMENT 1

RECOMMENDED TEXT CHANGES TO THE AUCKLAND REGIONAL LANDFILL PRECINCT

Auckland Regional Landfill Precinct (I617)

I617.1 Precinct Description

The precinct applies to the Auckland Regional Landfill and its surrounds. Its purpose is to recognise the existence of, and enable the efficient construction and operation of the landfill and the associated land and activities in recognition of its role in providing the long term, safe disposal of solid waste from Auckland and surrounding regions, and for enabling renewable energy generation from the biomass within the landfill.

The Auckland Regional Landfill Precinct ~~has two sub-precincts:~~ contains Sub-precinct A, which identifies the area where waste will be placed,; and ~~Sub-precinct B, which identifies an area of the precinct where works within the Natural Stream Management Area are subject to a different activity status than the overlay.~~ The remaining land within the precinct will be used for a range of activities associated with the landfill operations and energy generation. These associated activities include (but are not limited to) bin exchange area, stormwater treatment, access roads, soil stockpiles, gas and leachate collection and treatment, workshops, office facilities, and clay borrow. No new sensitive activities are to be located with the Precinct so that the site's advantage of a large buffer area from neighbouring sites is not compromised.

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

The land and the surrounding waterways, particularly the Hōteu River and the Kaipara Harbour, have significant value to mana whenua in terms of historical, spiritual and cultural associations. Areas within and adjacent to the Auckland Regional Landfill Precinct have significant ecological values (e.g. the Sunnybrook Reserve). The objectives and policies of the Precinct requires a full assessment of potential and actual effects (including cumulative and indirect effects) and a requirement to avoid, remedy, or mitigate these. Offset should only be undertaken where efforts to avoid, minimise and mitigate have been undertaken to the extent practicable and should adhere to best practice offsetting in New Zealand. Compensation should be used only as the last management option for residual effects not able to be addressed by the previous steps. Effects to be considered include ~~or offset/compensate~~ adverse effects., including those on ecological/freshwater and mana whenua values, that may be created by these activities. to the extent practicable.

The precinct anticipates that future landfill activities may utilise the Waitemata Regional Aquifer for water supply. Watercare uses (or has plans to use) the Waitemata Regional Aquifer to provide municipal water supply to the rapidly growing towns Warkworth, Wellsford and other northern towns. The precinct provisions protect this aquifer from potential contamination or adverse water quantity effects that may compromise this municipal water supply, and through that the health and wellbeing of the residents of these towns. The objectives and policies of this precinct require an assessment of potential adverse effects on this aquifer and for future landfill activities to avoid adverse effects on the aquifer.

The underlying zoning of land within this precinct is Rural – Rural Production zone.

1617.2 Objectives [rp/dp]

- (1) The development and continued operation of the Auckland Regional Landfill is enabled, recognising its regional significance as essential infrastructure, and recognising the benefits of biomass being used for renewable energy generation.
- (2) Human health and the environment are is protected from adverse effects of operational or closed landfills.
- (3) The Auckland Regional Landfill is designed, constructed, and operated so that the adverse effects of discharges to land, air and water, including groundwater, from the landfill are avoided, remedied or mitigated.
- ~~4. Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.~~
- (5) ~~Effects on the ecological and mana whenua values from w~~ Works within any Significant Ecological Area overlay, or Wetland Management Area overlay, or Natural Stream Management Area overlay areas are avoided. Where works cannot be avoided as far as practicable, and effects on the ecological and mana whenua values from works within any Natural Stream Management Area overlay are avoided where practicable or are otherwise minimised. Effects to consider include but are not limited to those outlined in D9.2(a)–(q).
- (6) The mauri of freshwater and indigenous biodiversity within those areas of the precinct not required for operations associated with the development and continued operation of the Auckland Regional Landfill is maintained and consistent with being enhanced over time.
- ~~(X1) Adverse water quality and quantity effects on the Waitemata Regional aquifer from activities within the precinct are avoided.~~
- ~~(X2) The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.~~
- ~~(X3) The Auckland Regional Landfill is designed and operated so that the waste becomes stabilised to an inert state as quickly as practicable following placement to enable timely transition to productive end use after landfill closure.~~
- ~~(X4) The Auckland Regional Landfill recognises the importance of the existing pipeline infrastructure as assets which are regionally and nationally significant and will ensure that they are protected and enabled.~~
- ~~(X5) The Auckland Regional Landfill is designed and operated so as to avoid, remedy or mitigate adverse effects on the transport network.~~

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above. ~~, except where there is a conflict, in which case these objectives take precedence.~~

I617.3 Policies [rp/dp]

- (1) Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation where it does not result in unacceptable adverse effects, including by maintaining adequate separation distances to sensitive receiver activities.
- (2) Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied or mitigated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan's Accidental Discovery Rule (E11.6.1).
- (3) Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
 - (a) adverse effects on the quality of freshwater, including groundwater, including from contamination and sediment;
 - (b) adverse effects from contaminants, and the potential for these to enter freshwater, including groundwater from both point and non-point sources;
 - (c) adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and
 - (d) ~~adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply;~~
 - (e) adverse effects on the quality of air, including from the discharge of contaminants and odour;
 - (X) the cumulative health effects from the air, land, and water.

including through the adoption of:

- the best practicable option for the treatment and discharge of stormwater;
- the use of industry best practice lining and landfill gas control system;
- waste acceptance procedures and criteria that prevent the acceptance of waste that could result in discharges that could adversely affect human health and / or environmental receptors;
- closure and aftercare procedures and monitoring that are industry best practice for these activities at the time of implementation; and
- the provision of an appropriate buffer within the precinct.

- ~~4. Subject to policy 5, provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill.~~
- ~~5. Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.~~
- ~~6. Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:~~

- a. ~~not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
- b. ~~any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~

- (X1) Adverse effects arising from the interception/diversion of recharge to the Waitemata Regional aquifer and adverse effects on the quality and quantity of water in the Waitemata Regional aquifer arising from the development and continued operation of the Auckland Regional Landfill are avoided within the Precinct. Any area within the Precinct where it is not practicable to achieve this must be identified through a three-dimensional physical area (e.g. a boundary or an ‘envelope’). Any water quality degradation must be contained within this area over the entire life of the landfill (including aftercare).
- (X2) The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste where feasible, and discourage the importing of fill material to the site for liner construction and landfill operations. This is to reduce discharges of hazardous air pollutants from vehicles accessing the precinct. Where it does occur require that innovative and/or alternative forms of transport are used such as rail or zero-emission transport.
- (X3) Human health effects from the establishment, operation, and aftercare of the landfill are avoided, minimised, or mitigated to an acceptable level.
- (X4) Manage discharges to land and water through an adaptive management regime that includes system monitoring and changes to management in response to monitoring results.
- (X5) Require any development to provide access and manage operations so as to support safe and efficient movement of vehicles, in particular heavy vehicles, accessing the site to or from the public road network.
- (X6) The Auckland Regional Landfill is designed, constructed, upgraded, and operated so that adverse effects on existing regionally and nationally significant pipeline infrastructure assets are avoided or mitigated.
- (X7) Manage adverse effects of buildings and structures by:
 - (a) requiring buildings, structures and earthworks associated with access and building platforms, to be of a design, form, scale, density and location to ensure sensitive integration within the landscape and the retention of rural character and amenity values; and
 - (b) avoiding buildings and structures on ridgelines and ensure their profile does not visually protrude above the natural line of the ridge.
- (X8) Require new landfills and landfill discharge consents to include a condition requiring the applicant to maintain a cash (or equivalent) bond in favour of the Council and drawn in terms satisfactory to the holder to provide security for early closure, environmental remediation, and post-closure aftercare.
- (X9) Require the use of waste acceptance criteria, operational practices and closure measures that optimise the stabilisation of the waste as quickly as possible following

emplacement in the landfill. The aspects to be controlled include arrangement, compaction and moisture levels in the waste and landfill gas production.

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above – with the exception of the following:

- Policy E13.3(4)

~~, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4).~~

I617.4 Activity Table

Table I617.4.1 Activity table specifies the activity status of land use and development activities in the Auckland Regional Landfill Precinct pursuant to sections 9 ~~and 11~~, 13, 14 and 15 of the Resource Management Act 1991.

Any reference to an activity includes its construction, operation and maintenance.

~~This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed⁴.~~

All relevant overlay, Auckland-wide and zone activity tables apply unless the activity is listed in Activity Table I617.4.1 below.

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
New landfills		
(A1)	Landfill in Sub-precinct A	D
(A2)	Discharges to air from landfills in Sub-Precinct A	D
(A3)	Discharges to land and water from landfills in Sub-precinct A that are otherwise categorised as non-complying in Chapter E13	D
(A4)	Landfill outside of Sub-Precinct A	NC
(A5)	Discharges to air, land and water from landfills outside of Sub-Precinct A	NC
<u>(AX1)</u>	<u>New landfills outside Sub-Precinct A (but inside the Auckland Regional Landfill Precinct) that are within 1km of the Precinct boundary</u>	<u>Pr</u>
Existing landfills		
(A6)	Discharges to air from existing landfills in Sub-Precinct A	RD
(A7)	Discharges to land and water from existing landfills in Sub-precinct A unless a more lenient activity status applies	RD

⁴ ~~Specifically, the rules in this table are intended to replace E3.4.1 (A49) E13.4.1 (A9), E14.4.1 (A160), and H19.8.1 (A67), and is intended to apply instead of any plan change to make landfills or associated activities non-complying.~~

Activity		Activity status
Activities in lakes, rivers, streams and wetlands		
(A8)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands outside overlays that are otherwise categorised as non-complying.	D
(A9)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands inside overlays unless a more lenient activity status applies	NC
Renewable energy		
(A10)	Energy generation from waste biomass, that is otherwise categorised as non-complying	D
(A11)	Discharges to air, land or water from energy generation from waste biomass, that are otherwise categorised as non-complying	D
<u>Drilling and Use of holes and bores in Sub-precinct A or within 500m of Sub-precinct A</u>		
(AX2)	Holes for: <ul style="list-style-type: none"> • <u>geotechnical investigation;</u> • <u>mineral exploration;</u> • <u>mineral extraction;</u> • <u>geological investigation;</u> • <u>contaminated site investigation; or</u> • <u>down-hole seismometers</u> 	<u>C</u>
(AX3)	Holes or bores for: <ul style="list-style-type: none"> • <u>stormwater disposal</u> • <u>down-hole heat exchangers</u> 	<u>C</u>
(AX4)	<u>Bores for groundwater level or quality monitoring</u>	<u>C</u>
(AX5)	<u>Restoration, alteration or replacement of lawfully established bores</u>	<u>C</u>
General		
(A12)	Office or workshop associated with landfill	D
(A13)	Bin exchange area	D
(A14)	Except for (A4), (A5) and (A9) above, any activity classified as a non-complying activity elsewhere in the Unitary Plan associated with any landfill activity	D
(A15)	Any landfill activity that does not comply with the restricted discretionary or discretionary activity standards in I617.6	NC
(AX6)	<u>Activities sensitive to air discharges</u>	<u>NC</u>
(AX7)	<u>Activities sensitive to hazardous facilities and infrastructure</u>	<u>NC</u>
(AX8)	<u>Activities sensitive to noise</u>	<u>NC</u>

Table I617.4.2 Activity Table – Sub-precinct B

Table I617.4.2 specifies the activity status of activities in, on, under, or over the bed of lakes, rivers, streams and wetlands within Sub-precinct B, pursuant to sections 13 and 14 of the Resource Management Act 1991. This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed.²

Activity		Activity status
(A1)	Works within lakes, rivers, streams (including intermittent streams) and wetlands within Sub-precinct B, including reclamation, drainage, diversion or disturbance of any watercourses, or construction of structures unless a more lenient activity status applies.	D

I617.5. Notification

- (1) Any application for resource consent for an activity listed in Table I617.4.1 Activity table above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991, except where I617.5(2) applies.
- (2) Any application under Rule I617.4.1 (A1), (A2), (A3), (A4), (A5), (A7) or (A15) ~~will~~ is required to be publicly notified.
- (3) When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I617.6 Standards

I617.6(1) Restricted Discretionary Standards

Activities listed as restricted discretionary activities in Table I617.4.1 must comply with the following restricted discretionary activity standards.

- (1) The discharge must be associated with an existing, legally authorised landfill ~~or ancillary activity.~~
- (2) Any placement of waste shall only occur within Sub-Precinct A, ~~shown on Precinct Plan 1.~~
- (3) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:
 - (a) Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s); or

² Specifically, the rules in this table are intended to replace E3.4.1 (A33) and E3.4.1 (A49) within the sub-precinct.

- (b) Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or
 - (c) Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.
- (4) There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of ~~a suitably qualified an~~ enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
 - (5) No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay ~~(except Sub-precinct B)~~.
 - (6) The maximum airspace volume of the landfill must not exceed 28.5 Mm³.
 - (X1) A three-dimensional physical area (e.g. a boundary or an 'envelope') as required by Policy I617.3 (X1) and Special information requirement I617.9.1(1) shall be identified and implemented.
 - (X2) Any activity within 20m of the existing gas and petroleum pipelines shall require the written authorisation from the infrastructure asset owner.
 - (X3) The waste truck movements shall not exceed 1,000 truck movements per day.

I617.6(2) Discretionary Standards

Activities listed as discretionary activities in Table I617.4.1 must comply with the following discretionary activity standards.

- (1) Any placement of waste shall only occur within Sub-Precinct A, ~~shown on Precinct Plan 1.~~
- (2) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:
 - (a) Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s); or
 - (b) Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or
 - (c) Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.

- (3) There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of ~~a suitably qualified~~ an enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
- (4) No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay ~~(except Sub-precinct B).~~
- (5) The maximum airspace volume of the landfill must not exceed 28.5 Mm³.
- (X1) A three-dimensional physical area (e.g. a boundary or an 'envelope') as required by Policy I617.3 (X1) and Special information requirement I617.9.1 (1) shall be identified and implemented.
- (X2) Any activity within 20m of the existing gas and petroleum pipelines shall require the written authorisation from the infrastructure asset owner.
- (X3) Only one landfill may be established in Sub-precinct A.

I617.7. Assessment – controlled activities

~~There are no controlled activities in this precinct.~~

I617.7.1 Matters of control

- (X1) For Drilling and Use of holes and bores from all controlled activities (AX2, AX3, AX4, and AX5):
 - a. borehole location
 - b. borehole design
 - c. drilling/installation methodology

I617.7.2 Assessment criteria

Drilling and Use of holes and bores

The Council will consider the relevant assessment criteria below for controlled activities:

- (X2) Whether the borehole location avoids drilling through the liner system whenever possible, or otherwise minimises contaminant release risks.
- (X3) The extent to which the borehole design avoids drilling through the liner system whenever possible, or at least ensures the borehole design will not create potential pathways for contaminant escape (now or in future).

(X4) The extent to which the drilling/installation methodology avoids drilling through the liner system whenever possible, or at least ensures the drilling method will not create potential pathways for contaminant escape (now or in future).

I617.8. Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

The Council will reserve its discretion to all of the following matters when assessing a restricted discretionary activity resource consent application, in addition to the matters specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

- (1) For discharge of contaminants into air from all restricted discretionary activities (A6):
 - (a) the matters in Policy E14.3(1); and
 - (b) location of site and activity; and
 - (c) site and plant layout.
 - (d) quantity, quality and type of discharge, including biological contaminants, and any effects arising from that discharge;
 - (e) sensitivity of receiving environment and separation distances between the activity and any sensitive land uses;
 - (Xa) previous complaints history;
 - (f) protocols for waste acceptance;
 - (g) odour, dust, visible emissions and hazardous air pollutant mitigation measures;
 - (h) monitoring requirements and management plans; and
 - (i) Closure and after-care plans (if the landfill is likely to close within the duration of the consent).

- (2) For other discharges from all restricted discretionary activities (A7):
 - (a) the quality and quantity of any discharge including methods for the treatment and disposal of contaminants;
 - (b) the method of discharge and adverse effects arising from the method chosen;
 - (c) the best practicable options for reducing adverse effects;

- (d) the location of any discharge point;
- (e) the rate and frequency of any discharge;
- (f) monitoring requirements, management plans and consent duration;
- (g) the effects on mana whenua values; and
- (h) closure and after-care plans (if the landfill is likely to close within the duration of the consent).

(Xa) the ability to avoid adverse effects on the water quality and quantity of the Regional Aquifer supplying municipal water.

(X1) For landfill activities exceeding 1,000 truck movements per day:

(Xa) the number of additional truck movements per day;

(Xb) the duration of the truck movements;

(Xc) the effect on the existing road network;

(Xd) the potential effect on any future road network;

(Xe) the effect on other road users;

(Xf) the assessment of alternative methods of transportation of waste;

(Xg) the use of renewable energy options for the transportation of waste.

I617.8.2 Assessment criteria

The Council will consider the relevant assessment criteria below for restricted discretionary activities, in addition to the assessment criteria specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

(1) Discharges to air from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- 4-(a) The degree to which Auckland Ambient Air Quality Targets are likely to be met where people are likely to be exposed to the specified contaminants for the relevant averaging period.
- ~~2-~~(b) Whether the amount of separation between the activity discharging contaminants into air and existing or potential activities sensitive to the air discharges is sufficient to mitigate adverse effects on the environment, health and amenity

- 3-(c) The extent to which adverse effects are avoided, remedied or mitigated including appropriate emissions control technology and use of management practices.
- 4-(d) Where applicable, the degree to which offsetting can remedy or mitigate adverse effects considering the proximity of the offset to where the effects of the discharge occur and the effective duration of the offset
- 5-(e) Whether there are practicable location and method options that cause less adverse effects and can still achieve the applicant's objectives
- 6-(f) The extent to which the odour and dust level meet the expectations for the Medium air quality – dust and odour area (Rural).
- 7-(g) Whether the assessment methods, including monitoring and modelling are appropriate to the scale of the discharge and any potential adverse effects
- 8-(h) Whether discharge into air are minimised as far as practicable, where appropriate through
- a-(i) use of best practicable option emissions control and management practices: or
 - b-(ii) minimisation of fugitive emissions.
- 9-(i) The adequacy of the Landfill Management Plan ~~site management plan~~ including:
- a-(i) operation of the site
 - b-(ii) placement and compaction of waste material
 - c-(iii) daily operating procedures
 - d-(iv) waste acceptance controls and monitoring;
 - e-(v) response to natural hazards and unexpected discharges;
 - f-(vi) Vermin and bird management;
 - g-(vii) load inspection records; and
 - h-(viii) monitoring, testing and sampling documentation
- 10-(j) The adequacy of the Aftercare Management Plan ~~site aftercare plan~~ including:
- a-(i) aftercare activities to address the risk posed by the contaminants to the environment: and
 - b-(ii) timing and standard of aftercare activities to efficiently and effectively transition to the end use.

(k) the extent to which an adaptive management regime will address the cumulative nature and severity of effects when considering the effectiveness of onsite management and monitoring techniques, monitoring of the receiving environment and onsite devices, implementation of adaptations, and reporting.

(2) Discharges to land and water from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

4.(a) potential adverse effects (including cumulative effects) are appropriately avoided ~~minimised or mitigated~~, taking into consideration all of the following:

- ~~a.~~(i) the nature of the contaminants and associated discharge to the receiving environment;
- ~~b.~~(ii) the sensitivity of the receiving environment, and its susceptibility to the adverse effects of the contaminants;
- ~~c.~~(iii) the extent to which contaminants from the site contribute to incremental and cumulative adverse effects on receiving environments including adverse effects on biodiversity, community and mana whenua uses and values
- ~~d.~~(iv) whether it is practicable to reduce existing adverse effects including site and operational constraints;
- ~~e.~~(v) the adequacy of the Landfill Management Plan ~~site management plan~~ including:
 - ~~I.~~● operation of the site;
 - ~~II.~~● placement and compaction of waste material;
 - ~~III.~~● daily operating procedures;
 - ~~IV.~~● waste acceptance controls and monitoring;
 - ~~V.~~● response to natural hazards and unexpected discharges;
 - ~~VI.~~● Vermin and bird management;
 - ~~VII.~~● load inspection records; and
 - ~~VIII.~~● monitoring, testing and sampling documentation
 - ~~IX.~~● Any other aspect(s) pertinent to the sound management of the site and/or associated risks in relation to relevant regional or national standards/guidance at the time of applying this criterion.

- f.(vi) the adequacy of the Aftercare Management Plan ~~site aftercare plan~~ including:
 - ~~I.●~~ aftercare activities to address the risk posed by the contaminants to the environment; and
 - ~~II.●~~ timing and standard to aftercare activities
 - ~~III.●~~ any other aspect(s) pertinent site aftercare and/or associated risks in relation to relevant regional or national standards/guidance at the time of applying this criterion.

(3) For landfill activities exceeding 1,000 truck movements per day:

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- (a) the maximum number of truck movements per day
- (b) the duration of the truck movements, such a seasonal truck movements;
- (c) the effect on traffic capacity the existing road network;
- (d) the effect on the road safety of the road network;
- (e) the effect on other road users;
- (f) the potential improvement of future road networks;
- (g) the potential effect on future road networks;
- (h) whether the use of alternative methods of transporting waste is a viable alternative;
- (i) whether the use of renewable energy options for transportation of waste is a viable alternative.

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

(X1) Any application for a new landfill under rules I617.4.1(A1)-(A7) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS:

- Bin Exchange Area Management Plan
- Site Emergency Management Plan
- Landfill Gas Management Plan
- Erosion and Sediment Control Plan
- Industrial and Trade Activities Management Plan
- Stormwater Management Plan
(demonstrating: location and extent of infrastructure including areas of on-site stormwater management; staging of development; functionality of stormwater treatment and mitigation systems throughout all phases including aftercare; and an assessment of downstream flooding, erosion impacts and appropriate mitigation measures)
 - Stormwater Operation and Maintenance Plan
 - Stormwater Monitoring and Contingency Plan
- Groundwater Monitoring and Contingency Plan
(To include the identification of a three-dimensional physical area (e.g. a boundary or an 'envelope') within the precinct and demonstrating that water quality degradation can be contained within the identified envelope. Degradation will be measured against water quality standards and/or guidelines that are in effect at the time for the protection of human health and environmental receptors. Standards and / or guidelines shall be selected in accordance with Ministry of Health and / or Ministry for the Environment guidance on the selection and application of guideline values in New Zealand e.g. ANZECC 2000, ANZG 2018, Drinking Water Standards for New Zealand (2005 revised 2018), etc. and updates/replacements/supersedes).
- Leachate Monitoring and Contingency Plan
- Landscape Mitigation and Management Plan
- Ecological Enhancement and Restoration Plan
- Ecological Enhancement Pest Management Plan
- Off-Site Stream Compensation Plan (potentially)
- Public Access Plan
- Noise Management Plan
- Odour Management Plan
- Dust & Litter Control Plan
- Pest Control Plan
- Community Engagement Plan
- Iwi Engagement Plan
- Complaints Process, Recording, and Reporting
- Hazardous Substances Management Plan
- Aftercare Management Plan
 - Closure and Final Capping
 - Aftercare and End Use

INITIAL CONSTRUCTION:

- Construction Environmental Management Plan
- Construction Erosion and Sediment Control Plan
- Construction Traffic Management Plan
- Construction Noise and Vibration Management Plan
- Vegetation Management Plan

- Fauna Management Plan
 - Bat Management Plan (BMP) a
 - Avifauna Management Plan
 - Lizard Management Plan
 - Hochstetter's Frog Management Plan
- Native Freshwater Fish and Fauna Management Plan
 - Invertebrate Management Plan
 - Streamworks Management Plan

(X2) In preparing and implementing the Landfill Management Plan the applicant must consult an Iwi Liaison Group established for the Auckland Regional Landfill comprising mana whenua.

(X3) The Assessment of Environmental Effects provided with any application for resource consent shall include assessment of adverse effect on mana whenua cultural values, and how those effects may be avoided, remedies or mitigated.

(X4) In preparing and implementing the Landfill Management Plan the applicant must consult with a Community Liaison Group established for the Auckland Regional Landfill comprising representatives from:

- Adjacent landowners
- Community groups representing the communities of Wellsford, Warkworth, Mangakura, or other nearby areas
- Recreational users of the Mahurangi Forest
- Recreational users of the Hotoe River and Kaipara Harbour
- Commercial users of the Hotoe River and Kaipara Harbour

The initial members of the Community Liaison Group must be agreed to by Auckland Council and the membership can be reviewed at any time with the agreement of Auckland Council. The Community Liaison Group is to meet regularly throughout the life of the landfill to be informed of the landfill operations and to provide feedback on any issues affecting the community regarding the landfill.

I617.9.2 Discharges to water

(X1) All applications must be accompanied by a water monitoring plan, including detail on frequency, parameters, trigger levels, and contingency planning with consideration of the New Zealand Drinking Water Standards and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG).

(X2) All applications must be accompanied by evidence to demonstrate that Watercare has been notified about the proposal the outcome of consultation with Watercare.

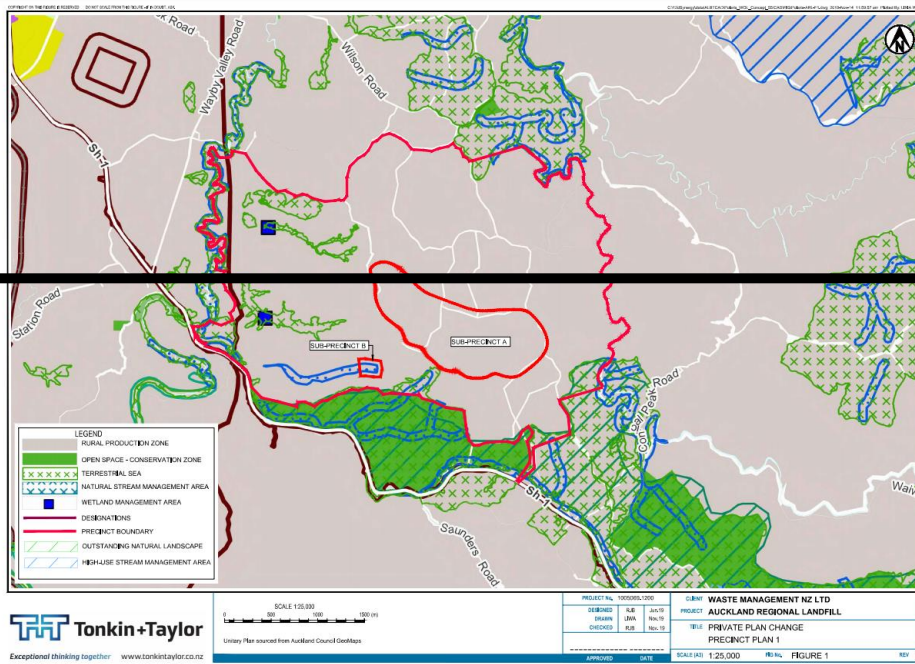
I617.9.3 New Landfills and Discharges to air, land or water

(X1) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of historic heritage is required which considers all of the historic heritage values identified in the Unitary Plan B5 policies, specifically in relation to the buildings, settings, and historic plantings within the precinct.

(X2) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of the ecological values of the Precinct in accordance with the provisions in B7.2.2.

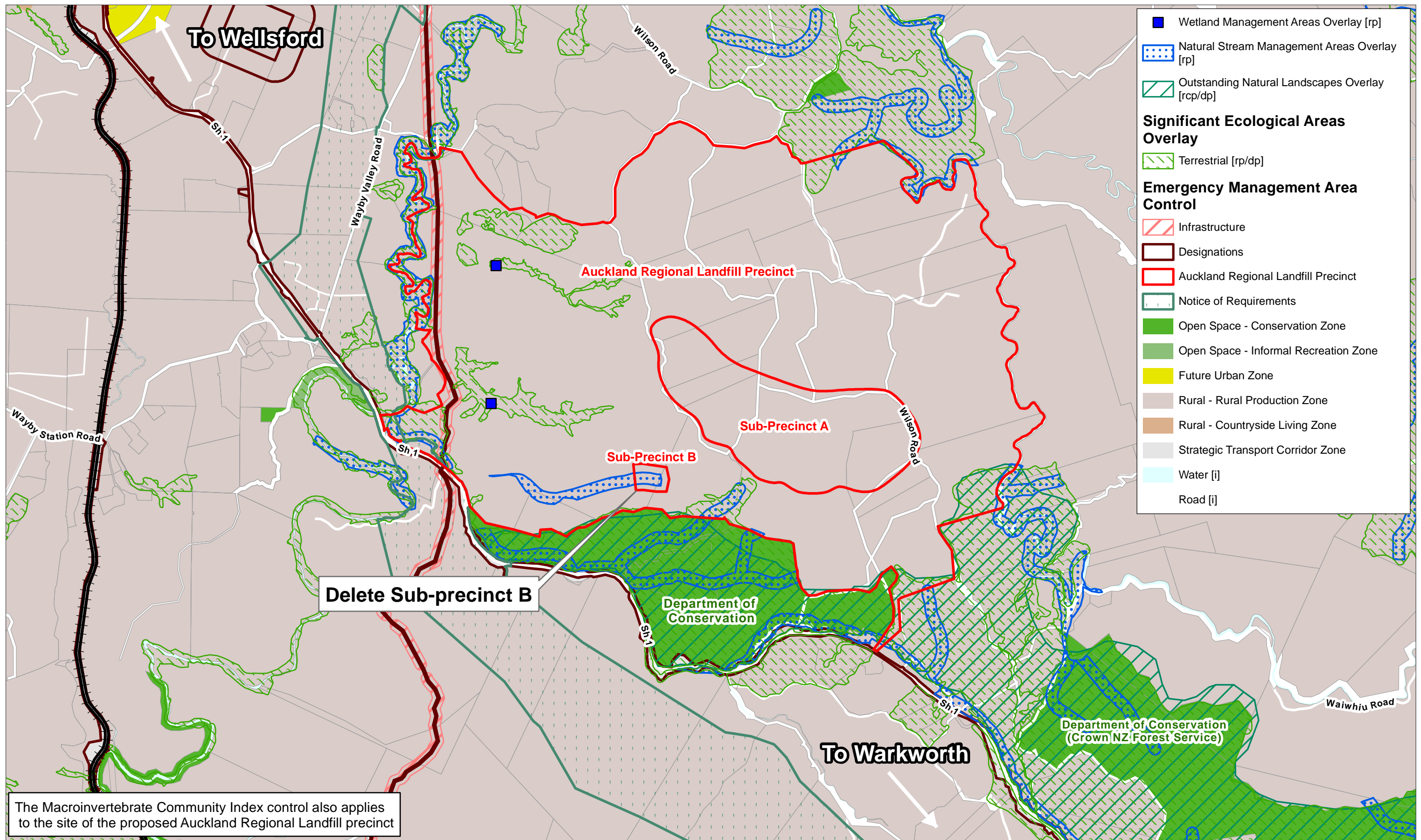
I617.10. Precinct plan

There are no precinct plans in this precinct.



ATTACHMENT 2

RECOMMENDED MAP CHANGES TO THE AUCKLAND REGIONAL LANDFILL PRECINCT



0 245 490 980 Metres

Whilst due care has been taken, Auckland Council gives no warranty as to the accuracy and completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information.

Date: 24/09/2020

Recommended changes to Unitary Plan maps (delete Sub-precinct B)



ATTACHMENT 3

AUCKLAND REGIONAL LANDFILL PRECINCT INCORPORATING RECOMMENDED CHANGES

Auckland Regional Landfill Precinct (I617)

I617.1 Precinct Description

The precinct applies to the Auckland Regional Landfill and its surrounds. Its purpose is to recognise the existence of, and enable the efficient construction and operation of the landfill and the associated land and activities in recognition of its role in providing the long term, safe disposal of solid waste from Auckland and surrounding regions, and for enabling renewable energy generation from the biomass within the landfill.

The Auckland Regional Landfill Precinct contains Sub-precinct A, which identifies the area where waste will be placed. The remaining land within the precinct will be used for a range of activities associated with the landfill operations and energy generation. These associated activities include (but are not limited to) bin exchange area, stormwater treatment, access roads, soil stockpiles, gas and leachate collection and treatment, workshops, office facilities, and clay borrow. No new sensitive activities are to be located with the Precinct so that the site's advantage of a large buffer area from neighbouring sites is not compromised.

The land and the surrounding waterways, particularly the Hōteu River and the Kaipara Harbour, have significant value to mana whenua in terms of historical, spiritual and cultural associations. Areas within and adjacent to the Auckland Regional Landfill Precinct have significant ecological values (e.g. the Sunnybrook Reserve). The objectives and policies of the Precinct requires a full assessment of potential and actual effects (including cumulative and indirect effects) and a requirement to avoid, remedy, or mitigate these. Offset should only be undertaken where efforts to avoid, minimise and mitigate have been undertaken to the extent practicable and should adhere to best practice offsetting in New Zealand. Compensation should be used only as the last management option for residual effects not able to be addressed by the previous steps. Effects to be considered include those on ecological/freshwater and mana whenua values, that may be created by these activities.

The precinct anticipates that future landfill activities may utilise the Waitemata Regional Aquifer for water supply. Watercare uses (or has plans to use) the Waitemata Regional Aquifer to provide municipal water supply to the rapidly growing towns Warkworth, Wellsford and other northern towns. The precinct provisions protect this aquifer from potential contamination or adverse water quantity effects that may compromise this municipal water supply, and through that the health and wellbeing of the residents of these towns. The objectives and policies of this precinct require an assessment of potential adverse effects on this aquifer and for future landfill activities to avoid adverse effects on the aquifer.

The underlying zoning of land within this precinct is Rural – Rural Production zone.

I617.2 Objectives [rp/dp]

- (1) The development and continued operation of the Auckland Regional Landfill is enabled, recognising its regional significance as essential infrastructure, and recognising the benefits of biomass being used for renewable energy generation.
- (2) Human health and the environment are protected from adverse effects of operational or closed landfills.
- (3) The Auckland Regional Landfill is designed, constructed, and operated so that the adverse effects of discharges to land, air and water, including groundwater, from the landfill are avoided, remedied or mitigated.

- (5) Works within any Significant Ecological Area overlay, Wetland Management Area overlay, or Natural Stream Management Area overlay areas are avoided. Where works cannot be avoided as far as practicable are otherwise minimised. Effects to consider include but are not limited to those outlined in D9.2(a)–(q).
- (6) The mauri of freshwater and indigenous biodiversity within those areas of the precinct not required for operations associated with the development and continued operation of the Auckland Regional Landfill is maintained and consistent with being enhanced over time.
- (X1) Adverse water quality and quantity effects on the Waitemata Regional aquifer from activities within the precinct are avoided.
- (X2) The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.
- (X3) The Auckland Regional Landfill is designed and operated so that the waste becomes stabilised to an inert state as quickly as practicable following placement to enable timely transition to productive end use after landfill closure.
- (X4) The Auckland Regional Landfill recognises the importance of the existing pipeline infrastructure as assets which are regionally and nationally significant and will ensure that they are protected and enabled.
- (X5) The Auckland Regional Landfill is designed and operated so as to avoid, remedy or mitigate adverse effects on the transport network.

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above.

I617.3 Policies [rp/dp]

- (1) Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation where it does not result in unacceptable adverse effects, including by maintaining adequate separation distances to sensitive receiver activities.
- (2) Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied or mitigated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan's Accidental Discovery Rule (E11.6.1).
- (3) Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:
 - (a) adverse effects on the quality of freshwater, including groundwater, including from contamination and sediment;
 - (b) adverse effects from contaminants, and the potential for these to enter freshwater, including groundwater from both point and non-point sources;
 - (c) adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and

- (e) adverse effects on the quality of air, including from the discharge of contaminants and odour;
- (X) the cumulative health effects from the air, land, and water.

including through the adoption of:

- the best practicable option for the treatment and discharge of stormwater;
 - the use of industry best practice lining and landfill gas control system;
 - waste acceptance procedures and criteria that prevent the acceptance of waste that could result in discharges that could adversely affect human health and / or environmental receptors;
 - closure and aftercare procedures and monitoring that are industry best practice for these activities at the time of implementation; and
 - the provision of an appropriate buffer within the precinct.
- (X1) Adverse effects arising from the interception/diversion of recharge to the Waitemata Regional aquifer and adverse effects on the quality and quantity of water in the Waitemata Regional aquifer arising from the development and continued operation of the Auckland Regional Landfill are avoided within the Precinct. Any area within the Precinct where it is not practicable to achieve this must be identified through a three-dimensional physical area (e.g. a boundary or an 'envelope'). Any water quality degradation must be contained within this area over the entire life of the landfill (including aftercare).
 - (X2) The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste where feasible, and discourage the importing of fill material to the site for liner construction and landfill operations. This is to reduce discharges of hazardous air pollutants from vehicles accessing the precinct. Where it does occur require that innovative and/or alternative forms of transport are used such as rail or zero-emission transport.
 - (X3) Human health effects from the establishment, operation, and aftercare of the landfill are avoided, minimised, or mitigated to an acceptable level.
 - (X4) Manage discharges to land and water through an adaptive management regime that includes system monitoring and changes to management in response to monitoring results.
 - (X5) Require any development to provide access and manage operations so as to support safe and efficient movement of vehicles, in particular heavy vehicles, accessing the site to or from the public road network.
 - (X6) The Auckland Regional Landfill is designed, constructed, upgraded, and operated so that adverse effects on existing regionally and nationally significant pipeline infrastructure assets are avoided or mitigated.
 - (X7) Manage adverse effects of buildings and structures by:
 - (a) requiring buildings, structures and earthworks associated with access and building platforms, to be of a design, form, scale, density and location to ensure sensitive integration within the landscape and the retention of rural character and amenity values; and
 - (b) avoiding buildings and structures on ridgelines and ensure their profile does not visually protrude above the natural line of the ridge.

- (X8) Require new landfills and landfill discharge consents to include a condition requiring the applicant to maintain a cash (or equivalent) bond in favour of the Council and drawn in terms satisfactory to the holder to provide security for early closure, environmental remediation, and post-closure aftercare.
- (X9) Require the use of waste acceptance criteria, operational practices and closure measures that optimise the stabilisation of the waste as quickly as possible following emplacement in the landfill. The aspects to be controlled include arrangement, compaction and moisture levels in the waste and landfill gas production.

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above – with the exception of the following:

- Policy E13.3(4)

I617.4 Activity Table

Table I617.4.1 Activity table specifies the activity status of land use and development activities in the Auckland Regional Landfill Precinct pursuant to sections 9, 13, 14 and 15 of the Resource Management Act 1991.

Any reference to an activity includes its construction, operation and maintenance.

All relevant overlay, Auckland-wide and zone activity tables apply unless the activity is listed in Activity Table I617.4.1 below.

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
New landfills		
(A1)	Landfill in Sub-precinct A	D
(A2)	Discharges to air from landfills in Sub-Precinct A	D
(A3)	Discharges to land and water from landfills in Sub-precinct A that are otherwise categorised as non-complying in Chapter E13	D
(A4)	Landfill outside of Sub-Precinct A	NC
(A5)	Discharges to air, land and water from landfills outside of Sub-Precinct A	NC
(AX1)	New landfills outside Sub-Precinct A (but inside the Auckland Regional Landfill Precinct) that are within 1km of the Precinct boundary	Pr
Existing landfills		
(A6)	Discharges to air from existing landfills in Sub-Precinct A	RD
(A7)	Discharges to land and water from existing landfills in Sub-precinct A unless a more lenient activity status applies	RD

Activity		Activity status
Renewable energy		
(A10)	Energy generation from waste biomass, that is otherwise categorised as non-complying	D
(A11)	Discharges to air, land or water from energy generation from waste biomass, that are otherwise categorised as non-complying	D
Drilling and Use of holes and bores in Sub-precinct A or within 500m of Sub-precinct A		
(AX2)	Holes for: <ul style="list-style-type: none"> • geotechnical investigation; • mineral exploration; • mineral extraction; • geological investigation; • contaminated site investigation; or • down-hole seismometers 	C
(AX3)	Holes or bores for: <ul style="list-style-type: none"> • stormwater disposal • down-hole heat exchangers 	C
(AX4)	Bores for groundwater level or quality monitoring	C
(AX5)	Restoration, alteration or replacement of lawfully established bores	C
General		
(A12)	Office or workshop associated with landfill	D
(A13)	Bin exchange area	D
(A15)	Any landfill activity that does not comply with the restricted discretionary or discretionary activity standards in I617.6	NC
(AX6)	Activities sensitive to air discharges	NC
(AX7)	Activities sensitive to hazardous facilities and infrastructure	NC
(AX8)	Activities sensitive to noise	NC

I617.5. Notification

- (1) Any application for resource consent for an activity listed in Table I617.4.1 Activity table above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991, except where I617.5(2) applies.
- (2) Any application under Rule I617.4.1 (A1), (A2), (A3), (A4), (A5), (A7) or (A15) is required to be publicly notified.
- (3) When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I617.6 Standards

I617.6(1) Restricted Discretionary Standards

Activities listed as restricted discretionary activities in Table I617.4.1 must comply with the following restricted discretionary activity standards.

- (1) The discharge must be associated with an existing, legally authorised landfill.
- (2) Any placement of waste shall only occur within Sub-Precinct A.
- (3) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:
 - (a) Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s); or
 - (b) Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or
 - (c) Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.
- (4) There shall be no offensive or objectionable odour effects beyond the Precinct boundary caused by the landfilling operation, in the opinion of an enforcement officer when assessed in accordance with the '*Good Practice Guide for Assessing and Managing Odour*', (Ministry for the Environment, 2016).
- (5) No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay.
- (6) The maximum airspace volume of the landfill must not exceed 28.5 Mm³.
- (X1) A three-dimensional physical area (e.g. a boundary or an 'envelope') as required by Policy I617.3 (X1) and Special information requirement I617.9.1(1) shall be identified and implemented.
- (X2) Any activity within 20m of the existing gas and petroleum pipelines shall require the written authorisation from the infrastructure asset owner.
- (X3) The waste truck movements shall not exceed 1,000 truck movements per day.

I617.6(2) Discretionary Standards

Activities listed as discretionary activities in Table I617.4.1 must comply with the following discretionary activity standards.

- (1) Any placement of waste shall only occur within Sub-Precinct A.
- (2) A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:
 - (a) Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s);
or
 - (b) Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or
 - (c) Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.
- (3) There shall be no offensive or objectionable odour effects beyond the Precinct boundary caused by the landfilling operation, in the opinion of an enforcement officer when assessed in accordance with the '*Good Practice Guide for Assessing and Managing Odour*', (*Ministry for the Environment, 2016*).
- (4) No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay.
- (5) The maximum airspace volume of the landfill must not exceed 28.5 Mm³.
- (X1) A three-dimensional physical area (e.g. a boundary or an 'envelope') as required by Policy I617.3 (X1) and Special information requirement I617.9.1 (1) shall be identified and implemented.
- (X2) Any activity within 20m of the existing gas and petroleum pipelines shall require the written authorisation from the infrastructure asset owner.
- (X3) Only one landfill may be established in Sub-precinct A.

I617.7. Assessment – controlled activities

I617.7.1 Matters of control

- (X1) For Drilling and Use of holes and bores from all controlled activities (AX2, AX3, AX4, and AX5):
- a. borehole location
 - b. borehole design
 - c. drilling/installation methodology

I617.7.2 Assessment criteria

Drilling and Use of holes and bores

The Council will consider the relevant assessment criteria below for controlled activities:

- (X2) Whether the borehole location avoids drilling through the liner system whenever possible, or otherwise minimises contaminant release risks.
- (X3) The extent to which the borehole design avoids drilling through the liner system whenever possible, or at least ensures the borehole design will not create potential pathways for contaminant escape (now or in future).
- (X4) The extent to which the drilling/installation methodology avoids drilling through the liner system whenever possible, or at least ensures the drilling method will not create potential pathways for contaminant escape (now or in future).

I617.8. Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

The Council will reserve its discretion to all of the following matters when assessing a restricted discretionary activity resource consent application, in addition to the matters specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

- (1) For discharge of contaminants into air from all restricted discretionary activities (A6):
- (a) the matters in Policy E14.3(1); and
 - (b) location of site and activity; and
 - (c) site and plant layout.

- (d) quantity, quality and type of discharge, including biological contaminants, and any effects arising from that discharge;
- (e) sensitivity of receiving environment and separation distances between the activity and any sensitive land uses;
- (Xa) previous complaints history;
- (f) protocols for waste acceptance;
- (g) odour, dust, visible emissions and hazardous air pollutant mitigation measures;
- (h) monitoring requirements and management plans; and
- (i) Closure and after-care plans (if the landfill is likely to close within the duration of the consent).

(2) For other discharges from all restricted discretionary activities (A7):

- (a) the quality and quantity of any discharge including methods for the treatment and disposal of contaminants;
- (b) the method of discharge and adverse effects arising from the method chosen;
- (c) the best practicable options for reducing adverse effects;
- (d) the location of any discharge point;
- (e) the rate and frequency of any discharge;
- (f) monitoring requirements, management plans and consent duration;
- (g) the effects on mana whenua values; and
- (h) closure and after-care plans (if the landfill is likely to close within the duration of the consent).
- (Xa) the ability to avoid adverse effects on the water quality and quantity of the Regional Aquifer supplying municipal water.

(X1) For landfill activities exceeding 1,000 truck movements per day:

- (Xa) the number of additional truck movements per day;
- (Xb) the duration of the truck movements;
- (Xc) the effect on the existing road network;

- (Xd) the potential effect on any future road network;
- (Xe) the effect on other road users;
- (Xf) the assessment of alternative methods of transportation of waste;
- (Xg) the use of renewable energy options for the transportation of waste.

I617.8.2 Assessment criteria

The Council will consider the relevant assessment criteria below for restricted discretionary activities, in addition to the assessment criteria specified for the relevant restricted discretionary activities in the overlays, Auckland-wide or zones provisions:

(1) Discharges to air from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- (a) The degree to which Auckland Ambient Air Quality Targets are likely to be met where people are likely to be exposed to the specified contaminants for the relevant averaging period.
- (b) Whether the amount of separation between the activity discharging contaminants into air and existing or potential activities sensitive to the air discharges is sufficient to mitigate adverse effects on the environment, health and amenity
- (c) The extent to which adverse effects are avoided, remedied or mitigated including appropriate emissions control technology and use of management practices.
- (d) Where applicable, the degree to which offsetting can remedy or mitigate adverse effects considering the proximity of the offset to where the effects of the discharge occur and the effective duration of the offset
- (e) Whether there are practicable location and method options that cause less adverse effects and can still achieve the applicant's objectives
- (f) The extent to which the odour and dust level meet the expectations for the Medium air quality – dust and odour area (Rural).
- (g) Whether the assessment methods, including monitoring and modelling are appropriate to the scale of the discharge and any potential adverse effects
- (h) Whether discharge into air are minimised as far as practicable, where appropriate through
 - (i) use of best practicable option emissions control and management practices: or

- (ii) minimisation of fugitive emissions.
- (i) The adequacy of the Landfill Management Plan including:
 - (i) operation of the site
 - (ii) placement and compaction of waste material
 - (iii) daily operating procedures
 - (iv) waste acceptance controls and monitoring;
 - (v) response to natural hazards and unexpected discharges;
 - (vi) Vermin and bird management;
 - (vii) load inspection records; and
 - (viii) monitoring, testing and sampling documentation
- (j) The adequacy of the Aftercare Management Plan including:
 - (i) aftercare activities to address the risk posed by the contaminants to the environment: and
 - (ii) timing and standard of aftercare activities to efficiently and effectively transition to the end use.
- (k) the extent to which an adaptive management regime will address the cumulative nature and severity of effects when considering the effectiveness of onsite management and monitoring techniques, monitoring of the receiving environment and onsite devices, implementation of adaptations, and reporting.

(2) Discharges to land and water from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- (a) potential adverse effects (including cumulative effects) are appropriately avoided, taking into consideration all of the following:
 - (i) the nature of the contaminants and associated discharge to the receiving environment;
 - (ii) the sensitivity of the receiving environment, and its susceptibility to the adverse effects of the contaminants;
 - (iii) the extent to which contaminants from the site contribute to incremental and cumulative adverse effects on receiving environments including adverse effects on biodiversity, community and mana whenua uses and values

- (iv) whether it is practicable to reduce existing adverse effects including site and operational constraints;
- (v) the adequacy of the Landfill Management Plan including:
 - operation of the site;
 - placement and compaction of waste material;
 - daily operating procedures;
 - waste acceptance controls and monitoring;
 - response to natural hazards and unexpected discharges;
 - Vermin and bird management;
 - load inspection records; and
 - monitoring, testing and sampling documentation
 - Any other aspect(s) pertinent to the sound management of the site and/or associated risks in relation to relevant regional or national standards/guidance at the time of applying this criterion.
- (vi) the adequacy of the Aftercare Management Plan including:
 - aftercare activities to address the risk posed by the contaminants to the environment; and
 - timing and standard to aftercare activities
 - any other aspect(s) pertinent site aftercare and/or associated risks in relation to relevant regional or national standards/guidance at the time of applying this criterion.

(3) For landfill activities exceeding 1,000 truck movements per day:

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

- (a) the maximum number of truck movements per day
- (b) the duration of the truck movements, such a seasonal truck movements;
- (c) the effect on traffic capacity the existing road network;
- (d) the effect on the road safety of the road network;

- (e) the effect on other road users;
- (f) the potential improvement of future road networks;
- (g) the potential effect on future road networks;
- (h) whether the use of alternative methods of transporting waste is a viable alternative;
- (i) whether the use of renewable energy options for transportation of waste is a viable alternative.

I617.9. Special information requirements

I617.9.1 New Landfills

- (X1) Any application for a new landfill under rules I617.4.1(A1)-(A7) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS:

- Bin Exchange Area Management Plan
- Site Emergency Management Plan
- Landfill Gas Management Plan
- Erosion and Sediment Control Plan
- Industrial and Trade Activities Management Plan
- Stormwater Management Plan
(demonstrating: location and extent of infrastructure including areas of on-site stormwater management; staging of development; functionality of stormwater treatment and mitigation systems throughout all phases including aftercare; and an assessment of downstream flooding, erosion impacts and appropriate mitigation measures)
 - Stormwater Operation and Maintenance Plan
 - Stormwater Monitoring and Contingency Plan
- Groundwater Monitoring and Contingency Plan
(To include the identification of a three-dimensional physical area (e.g. a boundary or an 'envelope') within the precinct and demonstrating that water quality degradation can be contained within the identified envelope. Degradation will be measured against water quality standards and/or guidelines that are in effect at the time for the protection of human health and environmental receptors. Standards and / or guidelines shall be selected in accordance with Ministry of Health and / or Ministry for the Environment guidance on the selection and application of guideline values in New Zealand e.g. ANZECC 2000, ANZG 2018, Drinking Water Standards for New Zealand (2005 revised 2018), etc. and updates/replacements/supersedes).
- Leachate Monitoring and Contingency Plan
- Landscape Mitigation and Management Plan

- Ecological Enhancement and Restoration Plan
- Ecological Enhancement Pest Management Plan
- Off-Site Stream Compensation Plan (potentially)
- Public Access Plan
- Noise Management Plan
- Odour Management Plan
- Dust & Litter Control Plan
- Pest Control Plan
- Community Engagement Plan
- Iwi Engagement Plan
- Complaints Process, Recording, and Reporting
- Hazardous Substances Management Plan
- Aftercare Management Plan
 - Closure and Final Capping
 - Aftercare and End Use

INITIAL CONSTRUCTION:

- Construction Environmental Management Plan
- Construction Erosion and Sediment Control Plan
- Construction Traffic Management Plan
- Construction Noise and Vibration Management Plan
- Vegetation Management Plan
- Fauna Management Plan
 - Bat Management Plan (BMP) a
 - Avifauna Management Plan
 - Lizard Management Plan
 - Hochstetter's Frog Management Plan
- Native Freshwater Fish and Fauna Management Plan
 - Invertebrate Management Plan
 - Streamworks Management Plan

- (X2) In preparing and implementing the Landfill Management Plan the applicant must consult an Iwi Liaison Group established for the Auckland Regional Landfill comprising mana whenua.
- (X3) The Assessment of Environmental Effects provided with any application for resource consent shall include assessment of adverse effect on mana whenua cultural values, and how those effects may be avoided, remedies or mitigated.
- (X4) In preparing and implementing the Landfill Management Plan the applicant must consult with a Community Liaison Group established for the Auckland Regional Landfill comprising representatives from:
- Adjacent landowners
 - Community groups representing the communities of Wellsford, Warkworth, Mangakura, or other nearby areas
 - Recreational users of the Mahurangi Forest
 - Recreational users of the Hoteo River and Kaipara Harbour
 - Commercial users of the Hoteo River and Kaipara Harbour

The initial members of the Community Liaison Group must be agreed to by Auckland Council and the membership can be reviewed at any time with the agreement of Auckland Council. The Community Liaison Group is to meet regularly throughout the life of the landfill to be informed of the landfill

operations and to provide feedback on any issues affecting the community regarding the landfill.

I617.9.2 Discharges to water

- (X1) All applications must be accompanied by a water monitoring plan, including detail on frequency, parameters, trigger levels, and contingency planning with consideration of the New Zealand Drinking Water Standards and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG).
- (X2) All applications must be accompanied by evidence to demonstrate that Watercare has been notified about the proposal the outcome of consultation with Watercare.

I617.9.3 New Landfills and Discharges to air, land or water

- (X1) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of historic heritage is required which considers all of the historic heritage values identified in the Unitary Plan B5 policies, specifically in relation to the buildings, settings, and historic plantings within the precinct.
- (X2) The first application made for a new landfill (A1)-(A7) must be accompanied by an assessment of the ecological values of the Precinct in accordance with the provisions in B7.2.2.

I617.10. Precinct plan

There are no precinct plans in this precinct.

ATTACHMENT 4

PRIVATE PLAN CHANGE 42: AUCKLAND REGIONAL LANDFILL - WAYBY VALLEY

This attachment has not been re-produced and can be found at

<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/unitary-plan/auckland-unitary-plan-modifications/Pages/details.aspx?UnitaryPlanId=64>

ATTACHMENT 5
TECHNICAL SPECIALIST MEMOS

21 / 9 / 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Mark Lowe, Consultant Freshwater Ecologist, Morphem Environmental

Subject: Private Plan Change – Regional Landfill – Freshwater Ecology Assessment

1.0 Introduction

- 1.1 Morphem Environmental Limited (Morphum) has been engaged by Auckland Council to provide a Technical Assessment of the freshwater ecological effects in relation to a proposed private plan change referred to as the 'Auckland Regional Landfill'.
- 1.2 The private plan change requested seeks to introduce a new precinct into the Unitary Plan – the Auckland Regional Landfill Precinct. The extent of the proposed precinct covers an area of approximately 1,020 ha owned by Waste Management New Zealand (WMNZ) in the Wayby Valley.
- 1.3 This memorandum provides a review and assessment of the application material, as notified, from a freshwater ecological perspective. The adequacy of the supplied information and consistency with the policy direction of the Auckland Unitary Plan: Operative in Part (AUP:OP) is reviewed and assessed. Submissions and further submissions are also reviewed and assessed where they raise matters that relate to matters covered by this Technical Assessment.
- 1.4 This Technical Assessment specifically covers potential effects arising from activities in, on, under or over the bed of streams and wetlands, and the provisions of the proposed Plan Change in addressing those potential adverse effects. Assessment of stormwater quality and quantity and the effects of discharge on the freshwater environment are assessed by other Council specialists. Assessment of terrestrial Ecology effects is also assessed by other Council specialists.
- 1.5 In writing this memo, I have reviewed the following documents:
 - *Auckland Regional Landfill Private Plan Change Request: Assessment of Effects and Section 32 Analysis. Prepared by Tonkin and Taylor Ltd. Dated 17 July 2019. (Herein referred to as the 'Planning Report').*
 - *Auckland Regional Landfill: Assessment of Aquatic and Terrestrial: Ecological Values and Effects. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019. (Herein referred to as the EclA).*
 - *Auckland Regional Landfill: Water Quality Baseline Monitoring Report. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019.*
 - *Auckland Regional Landfill: Engineering Report. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019.*
 - *Auckland Regional Landfill: Sediment and Erosion Control Assessment. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019. (Herein referred to as the ESC Report).*
 - *Auckland Regional Landfill: Stormwater and Industrial and Trade Activity. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019.*
 - *Memorandum: Clause 23 Response: Auckland Regional Landfill - Private Plan Change. Attention Peter Vari. Prepared by Tonkin and Taylor. Dated 15 November 2019 (Herein referred to as the s23 Response).*
- 1.6 I undertook site visits on 7th and 21st of March 2019.

2.0 Key Freshwater Ecology Issues

2.1 The key freshwater ecology issues are summarised below, these are discussed further in section 5.

2.2 The Plan Change Request relies on the site being an appropriate location for the activity

The consideration of ecological values in selecting the preferred site was limited to the use of existing Auckland Unitary Plan overlays such as Significant Ecological Areas (SEA), Natural Stream Management Areas (NSMA) and Wetland Management Areas (WMA). Only subsequent to the selection of the Wayby valley site were ecological field surveys undertaken that identified additional Very High ecological value streams with several 'at risk' species.

2.3 Appropriateness of the proposed discretionary activity status for stream and wetland reclamation

The proposed plan change seeks to change the activity status of stream and wetland reclamation from non-complying (Chapter E3 of the AUP:OP) to discretionary (for freshwater systems outside overlays and a section of NSMA within sub-precinct B).

However, it is considered that the existing policy framework of the AUP:OP adequately recognises municipal landfills as infrastructure and the existing non-complying activity status attributed to stream and wetland reclamation is appropriate.

Furthermore, the National Environmental Standards for Freshwater (NES-FW), which became operative (in part) on the 3rd of September 2020, makes earthworks and diversion and drainage within a natural wetland a prohibited activity (section 53) where not having a separate activity status under sections 38 to 51.

2.4 Wording of the activity tables (I617.4).

Should the proposed activity status for stream and wetland reclamation be accepted as part of the plan change, recommendations are made to provide further clarification of the activity tables.

2.5 Appropriateness of objectives and policies relating to the effects management hierarchy.

Objective (I617.2) 4 and Policies (I617.3), 4, 5 and 6 of the Precinct Plan set out a framework for managing adverse effects of activities associated with the development and operation of the Auckland Regional Landfill. This is not considered necessary as the existing provisions of the Resource Management Act (RMA), National Policy Statement for Freshwater Management (NPS-FM), NES-FW and AUP:OP sufficiently provide for this framework including the consideration of offsetting and compensation of significant residual adverse effects that cannot practically be avoided, remedied or mitigated.

2.6 Appropriateness and wording of policy 6 specifically

Should the proposed Policies 4, 5, and 6 be accepted as part of the plan change there are further concerns with the wording of policy 6 specifically. These concerns relate to:

- pre-empting an inability to fully manage the significant adverse effects of an activity,
- lack of clarity regarding the preferred ratio included,
- pre-empting an increased time lag in delivering offsets and compensation.
- Generally, proposed policy 6 undermines the need to undertake an appropriate assessment of effects and appropriate means to manage those effects at a resource consent stage.

3.0 Applicant's Assessment

- 3.1 The legal descriptions of the land parcels effected by the proposal are provided in table 1.3. of the Planning Report. The overall site area is approximately 1,020 ha (Subject Site), with the landfill footprint occupying approximately 60 ha of the subject site (Project Footprint)
- 3.2 Section 2.3 of the Planning and section 2 of the EclA provides a description of the wider site including the watercourses and wetlands within.
- 3.3 These descriptions are considered appropriate and adequate to make an informed assessment of the proposed Plan Change.
- 3.4 Section 4.9 of the Planning Report summarises the potential effects on surface water systems from developing a landfill within the precinct as potential changes to stream habitat, water quality and effects on freshwater fauna.
- 3.5 The Planning Report concludes that it is considered that the proposed precinct provisions will provide for an appropriate assessment through the resource consent process, with policies requiring effects to be avoided, remedied or mitigated, or when significant effects are unavoidable, offset or compensated.
- 3.6 Concerns relating to the proposed Precinct Plan provisions are outlined in section 5 below.

4.0 Statutory Considerations

- 4.1 Key Statutory Considerations relating to the matters of this Technical Assessment are summarised below. The NPS-FM, Regional Policy Statement (RPS) and AUP:OP contain provisions that are relevant to the avoidance and management of adverse effects on freshwater systems, and the maintenance and enhancement of freshwater systems through development.
- 4.2 The NPS-FM (2020) includes provisions to safeguard ecological values and maintain or improve water quality, including:
 - Freshwater is managed in a way that gives effect to Te Mana o te Wai
 - Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained [...]
 - There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.
 - The loss of river extent and values is avoided to the extent practicable.
 - The habitats of indigenous freshwater species are protected.
- 4.3 The RPS includes a range of provisions that seek the loss of freshwater systems is avoided, adverse effects are managed, and enhancement of freshwater systems through development, including (but not limited to):
 - B7.3.1(1) Degraded freshwater systems are enhanced.
 - B7.3.1 (2) Loss of freshwater systems is minimised.
 - B7.3.1 (3) The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.
 - B7.3.2 (1) Integrate the management of subdivision, use and development and freshwater systems by undertaking all of the following [...] avoiding development

where it will significantly increase adverse effects on freshwater systems, unless these adverse effects can be adequately mitigated.

- B7.3.2 (3) Promote the enhancement of freshwater systems identified as being degraded to progressively reduce adverse effects.
 - B7.3.2 (6) Restore and enhance freshwater systems where practicable when development, change of land use, and subdivision occur.
 - B7.4.1 (2) The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded
 - B7.4.2 (5) The adverse effects from changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated
 - B7.4.2 (6) Progressively improve water quality in areas identified as having degraded water quality through managing subdivision, use, development and discharges.
- 4.4 It is also noted that the RPS provides for an integrated and balanced approach whereby sustainable use of land and resources to provide for growth and development is allowed for when there is no practicable alternative and adverse effects are managed (B7.3.2 (4) and similarly B7.4.2 (1))
- 4.5 The regional provisions of the AUP:OP include various provisions to maintain and improve freshwater systems, avoid and manage adverse effects and to manage development that affects freshwater systems, including (but not limited to):
- E1.2. (1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas.
 - E1.3 (2) Manage discharges, subdivision, use, and development that affect freshwater systems to maintain or enhance water quality, flows, stream channels and their margins and other freshwater values [...]
 - E3.2 (2) Auckland's lakes, rivers, streams and wetlands are restored, maintained or enhanced.
 - E3.2 (6) Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.
 - E3.3 (2) Manage the effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands outside the overlays identified in Policy E3.3(1) by: (a) avoiding where practicable or otherwise remedying or mitigating any adverse effects on lakes, rivers, streams or wetlands; and (b) where appropriate, restoring and enhancing the lake, river, stream or wetland.
 - E3.3(3) Enable the enhancement, maintenance and restoration of lakes, rivers, streams or wetlands.

5.0 Assessment of Freshwater Ecology Effects

5.1 With regard to the freshwater ecological effects the following areas of concern are noted:

5.2 The Plan Change Request relies on the site being an appropriate location for the activity

- 5.2.1 The private plan change request relies on the site being an appropriate location for the for the proposed landfill and associated structures and activities. The application considers that the site is appropriate and was chosen as a result of an extensive site identification and selection process, which commenced from 2007.

- 5.2.2 The Site Selection Process Report limits consideration of ecological constraints in selecting the site location to the use of existing Auckland Unitary Plan overlays such as SEAs, NSMAs and WMAs.
- 5.2.3 It is noted that the Technical Guidelines for Disposal to Land¹ state that initial investigations should include an assessment of the sensitivity of biota and fauna at the site and downstream. Additionally, noting that careful siting of a landfill is fundamental to protect the environment from potential adverse effects associated with the disposal of waste materials.
- 5.2.4 Only subsequent to the selection of the Wayby valley site were ecological field surveys undertaken that identified several 'at risk' species including: longfin eel, inanga, kakahi and Hochstetter's frogs, as well as, the Very High ecological values as outlined in the EclA.
- 5.2.5 There are several AUP:OP objectives and policies that seek avoidance of reclamation of waterways and the enhancement and maintenance of waterways, including Objectives E3.2(1), (2), (6), Policy E3.3 (13); objectives B7.3.1(2) and (3) and policy B7.3.2 (4). Furthermore, the NPS-FM (2020) seeks that the loss of river extent and values is avoided to the extent practicable and that the habitats of indigenous freshwater species are protected.
- 5.2.6 It is the opinion of this Technical Assessment that, from a freshwater ecology perspective, other sites are likely to be more appropriate for this activity and the freshwater ecology assessment and measures of avoidance in selecting the site have not been adequately applied.
- 5.2.7 Notwithstanding the comments above, it is the opinion of this Technical Assessment that the adverse freshwater effects of a landfill activity could be managed through a robust application of the effects management hierarchy, preferably achieving a net gain of ecological value outcome. Noting that the EIANZ Ecological Impact Assessment Guidelines² outlines that effects in the 'very high' level of effect category are unlikely to be acceptable on ecological grounds alone (even with compensation proposals) and that activities having 'very high' adverse effects should be avoided (Roper-Lindsay *et al.*, pg 84). However, the EIANZ Ecological Impact Assessment Guidelines also outline that where a 'very high' level of adverse effects cannot be avoided, a net biodiversity gain would be appropriate (Roper-Lindsay *et al.*, pg 84).

5.3 Appropriateness of the proposed discretionary activity status for stream and wetland reclamation

- 5.3.1 The proposed plan change seeks to change the activity status of stream and wetland reclamation from non-complying to discretionary (for freshwater systems outside overlays and a section of NSMA within sub-precinct B).
- 5.3.2 Section 3.2.2 of the Planning Report considers that by classifying any new landfills as non-complying [assuming reclamation], the current version of the AUP:OP is inconsistent with the recognition of the need for infrastructure because that classification suggests that it is an activity that is not envisaged or supported by the AUP:OP. Additionally, one of the purposes of the proposed plan change presented is to appropriately recognise landfills as infrastructure within the Auckland Unitary Plan.

¹ WasteMINZ, Technical Guidelines for Disposal to Land, August 2018.

² Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. 2018. Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

- 5.3.3 Relevant statutory considerations are outlined above in section 4. Several of these seek the avoidance of stream reclamation, however, recognise the need for growth, development and infrastructure and seek an integrated approach that manages adverse effects and realises maintenance and enhancement of freshwater systems.
- 5.3.4 The introductory text to chapter E3 of the AUP:OP acknowledges that there is a balance to be struck between providing in for infrastructure and the protection of freshwater environments. Municipal landfills are explicitly included in the definition of infrastructure within the AUP:OP. Throughout the AUP:OP policy framework consideration of the need for critical infrastructure is made with respect to stream reclamations, including the policy B7.3.2 (4) and E3.3 policies 7, 9 and 13.
- 5.3.5 The National Environmental Standards for Freshwater (NES-FW), which became operative (in part) on the 3rd of September 2020, makes earthworks and diversion and drainage within a natural wetland a prohibited activity (section 53) where not having a separate activity status under sections 38 to 51, including for 'specified infrastructure'.
- 5.3.6 It is understood that the proposed landfill does not meet the definition of 'specified infrastructure' in the NES-FW (it is not a "lifeline utility", not identified as regionally significant in the RPS or Regional Plan, and not for flood control).
- 5.3.7 Therefore, the proposed activity statuses for A8 and A9 from the activity table (617.4.1) and A1 from the activity table (617.4.2) would be more lenient than the NES-FW, which is not provided for under section 6 of the NES.
- 5.3.8 Therefore, it is considered that the existing policy framework of the AUP:OP adequately recognises municipal landfills as infrastructure. Additionally, the existing non-complying activity status attributed to stream and wetland reclamation in the AUP:OP is considered appropriate even when considering effects associated with municipal landfills; noting that if the landfill does not meet the 'specified infrastructure' definition in the NES-FW then wetland reclamation would be prohibited under the NES-FW.
- 5.3.9 Relief Sought:
- Rely on the AUP:OP provisions within chapter E3 and/or NES-FW for managing future proposed reclamation at a resource consent stage.
 - Remove A8 and A9 from the activity table (617.4.1) from the Precinct Plan.
 - Remove A1 from the activity table (617.4.2) from the Precinct Plan.
 - This essentially removes sub-precinct B, and therefore reference to sub-precinct B should also be removed from the plan.

5.4 Wording of the activity tables (I616.4).

- 5.4.1 Should the proposed activity status for stream and wetland reclamation be accepted as part of the plan change, the following changes and clarifications to the activity tables (I616.4) are recommended:
- 5.4.2 The foot note in the Precinct Plan states "*Specifically, the rules in this table are intended to replace E3.4.1 (A49) [...]*". It is considered that the intent may be to also include A48 in this list; if so this should be included in the foot note.
- 5.4.3 The activity tables (A8, A9 (617.4.1) and A1 (617.4.2)) refer to overlays; however, the relevant overlays are not specified. It should be made clear that the overlays referred to are those identified as being relevant to the activity table in chapter E3 of the AUP:OP.

5.4.4 The wording of the rules A8, A9 (617.4.1) and A1 (617.4.2) include the wording "*Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams [...]*". Diversion of any lakes, rivers, streams and wetlands is covered separately from reclamation under the AUP:OP (E3.4.1 A49 and A48 c.f. A19). It is anticipated that the intent of the proposed rule is to enable diversion and disturbance that is associated with the proposed reclamation. If this is the case then more complete headings in the activity table are recommended, similar to those used in the AUP:OP E3.4.1 (*Reclamation and drainage and associated structures, bed disturbance or depositing any substance, diversion of water, incidental temporary damming of water, and discharges arising from the piping of a reclaimed waterbody associated with the following*).

5.4.5 Relief Sought:

Should the proposed activity status for stream and wetland reclamation be accepted as part of the plan change, the following changes are recommended:

- Include reference to A48 in the activity table footnote
- Include reference to the overlays relevant to the activity table
- Include more complete headings in the activity table

5.5 Appropriateness of objectives and policies relating to the effects management hierarchy.

5.5.1 Objective (I617.2) 4 and Policies (I617.3), 4, 5 and 6 of the Precinct Plan set out a framework for managing adverse effects of activities associated with the development and operation of the Auckland Regional Landfill. This is not considered necessary as the existing provisions of the RMA, NPS-FM, NES-FW and AUP:OP sufficiently provide for this framework including the consideration of offsetting and compensation of significant residual adverse effects that cannot practically be avoided, remedied or mitigated.

5.5.2 Section 4.9 of the Planning Report states that the proposed precinct plan reflects the RPS objectives and policies in that they do not provide a directive to require full offsetting of significant residual effects. Again, it is not considered necessary to allow for this in the precinct plan as the existing AUP:OP already includes language regarding offsetting that is not strongly directive (for example, policy E3.3(4) states that restoration and enhancement actions, which may form part of an offsetting proposal, for a specific activity should [...] preferably achieve no net loss or a net gain in the natural values including ecological function of lakes, rivers, streams or wetlands) (emphasis added). Furthermore, the NPS-FM (2020) definition of the effects management hierarchy acknowledges the position of compensation within this framework.

5.5.3 The introduction of alternative wording regarding the management of effects that does not materially differ from the existing AUP:OP framework and intent may add confusion into the processing of consents under the proposed precinct.

5.5.4 The application of Objective (I617.2) 4 and Policies (I617.3), 4, 5 and 6 is described in paragraph 3 of the precinct description. As objective 4 and Policies 4, 5 and 6 are not considered necessary, this paragraph in the description is also not considered necessary. Amendments to paragraph 4 are also required.

5.5.5 Relief Sought:

- Rely on the AUP:OP provisions within chapter E3 and/or the NPS-FM and NES-FW for managing adverse effects on rivers, lakes, streams and wetlands.

- Remove Objective 4 from the Precinct Plan.
- Remove Policies 4, 5, and 6 from the Precinct Plan.
- Remove paragraph 3 from the Precinct description
- Amend paragraph 4:
 - The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or on some matters offset/compensate adverse effects, including on ~~ecological/freshwater and mana~~ whenua values, ~~that may be created by these activities to the extent practicable.~~

5.6 Appropriateness and wording of policy 6 specifically

- 5.6.1 Notwithstanding that it is considered that policies 4, 5 and 6 are not necessary as the existing provisions of the RMA, NPS-FM, NES-FW and AUP:OP sufficiently allow for the 'effects management hierarchy' to be applied; there are concerns with the wording of policy 6.
- 5.6.2 The wording of part (a) of the proposed policy undermines the principles of the 'effects management hierarchy' and pre-empts an inability to fully manage the significant adverse effects of an activity. Such an assessment is more appropriately assessed under the existing RMA, NPS-FM, NES-FW, and AUP:OP policy framework which does not preclude nor pre-empt this outcome.
- 5.6.3 The inclusion of a minimum preferred ratio in part (a) does not consider what the ratio applies to (for example: stream length, streambed area, wetland area, or biodiversity values etc.). It is not clear from the proposed policy wording if the ratio takes into account the ecological gains and losses considered in the offsetting or compensation trade; it is not clear if the proposed ratio is an area/length ratio or an area x condition ratio.
- 5.6.4 Part (b) of the proposed policy does not define the term 'long term'. Regardless, the policy enables management of effects with significant time lag in addressing the adverse effects.
- 5.6.5 The time it takes to generate biodiversity gains is an ecological impact in itself. The longer it takes to achieve an equivalent replacement, the greater the gains generated by the offset need to be to compensate for the time-lag³
- 5.6.6 Such an approach should be assessed at the time of a resource consent application without a policy, such as that proposed, predetermining the appropriateness. Time lags can be assessed and addressed with a variety of means, including multipliers and discount rates, and the appropriateness should be assessed as part of a complete effects management proposal.
- 5.6.7 Generally, the proposed policy 6 undermines the need to undertake an appropriate assessment of effects and appropriate means to manage those effects at a resource consenting stage.
- 5.6.8 Relief Sought:

Should the proposed Policies 4, 5, and 6 be accepted as part of the plan change, the following changes are recommended:

- Remove wording "to the extent reasonably practicable, and as offered by the applicant" from objective 4

³ Maseyk, F., Ussher, G., Kessels, G., Christensen, M., & Brown, M. (2018) The Biodiversity Offsetting under the Resource Management Act Guidance Document

- Remove wording “while recognising that:” from policy 6
- Remove sub-points a and b from policy 6

6.0 Submissions

- 6.1 At the time of writing this Technical Assessment 409 submission and 5 further submissions have been received on the Private Plan Change request. I have reviewed the submissions relevant to the matters considered in this Technical Assessment.
- 6.2 The submissions relating to aspects of this Technical Assessment can be predominantly summarised into the following themes:
- Concerns regarding adverse effects of the freshwater environment, including loss of habitat, fauna and flora.
 - Requesting the protection of the existing freshwater ecological environment.
 - Concern regarding the magnitude of proposed stream loss.
 - Concerns regarding the application of the effect’s management hierarchy.
 - Concerns regarding the location of the proposed precinct with respect to freshwater ecological values.
 - Concerns regarding the proposed precinct being contrary to the NPS-FM and AUP:OP and the risk of bypassing existing environmental regulations.
- 6.3 The majority of the above matters have been covered in this Technical Assessment, particularly in sections:
- Section 5.2: (The Plan Change Request relies on the site being an appropriate location for the activity)
 - Section 5.3: (Appropriateness of the proposed discretionary activity status for stream and wetland reclamation)
 - Section 5.5: (Appropriateness of objectives and policies relating to the effects management hierarchy).
 - Section 5.6: (Appropriateness and wording of policy 6 specifically)
- 6.4 The assessment of ecological values, ecological effects (including magnitude) and specific effects management package (avoidance, mitigation, offset and compensation measures) associated with a particular activity is more appropriately assessed as part of the resource consent application. However, it is acknowledged that the application material does signal the loss of over 15 km of watercourse with either existing or potential high ecological values.
- 6.5 Many of the submission raised concerns regarding the potential risks and adverse effects of contaminants (including sediment, stormwater or leachate) on the Hoteo River and/or Kaipara Harbour. These effects and the effectiveness of the proposed precinct to manage these effects is assessed by separate council specialists.
- 6.6 The majority of submissions relating to the matters of this Technical Assessment raised concerns, however, did not make specific comments or requests relating to the provisions of the proposed precinct.
- 6.7 It is considered necessary to provide further comment on specific submission points associated with two submissions as outlined in Appendix 2, specifically:
- Jodi Ellis (ID 66)
 - Department of Conservation (ID 148)

7.0 Conclusions and Recommendations

- 7.1 The EclA describes the freshwater environments within the proposed plan change boundaries, the descriptions are considered accurate and adequate to undertake an informed assessment of the ecological values of the proposed plan change area.
- 7.2 This Technical Assessment identifies several key areas of concern with the proposed plan change provisions, including:
- The Plan Change Request relies on the site being an appropriate location for the activity
 - Appropriateness of the proposed discretionary activity status for stream and wetland reclamation
 - Wording of the activity tables (I617.4.).
 - Appropriateness of objectives and policies relating to the effects management hierarchy.
 - Appropriateness and wording of policy 6 specifically
- 7.3 The relief sought to address each of these concerns is discussed in this Technical Assessment and summarised within Appendix 1 (Summary of Areas of Concern and Relief Sought). Overall, this Technical Assessment supports the plan change with the modifications outlined.
- 7.4 A number of submission and further submissions relevant to the matters discussed in this Technical Assessment have been received. My technical position on these submissions and further submissions are provide in Appendix 2 (Summary of Relevant Submissions Submissions).

Appendices

Appendix 1. Summary of Areas of Concern and Relief Sought

Table 1: Relief Sought	
Area of Concern	Relief Sought
Appropriateness of the proposed discretionary activity status for stream and wetland reclamation	<ul style="list-style-type: none"> - Rely on the existing AUP:OP provisions within chapter E3 and/or the NES-FW for managing future proposed reclamation at a resource consent stage. - Remove A8 and A9 from the activity table (617.4.1) from the Precinct Plan. - Remove A1 from the activity table (617.4.2) from the Precinct Plan. This essentially removes sub-prescient B, and therefore reference to sub-prescient B should also be removed from the plan.
Wording of the activity tables (I617.4.).	<p>Should the proposed activity status for stream and wetland reclamation be accepted as part of the plan change, the following changes are recommended:</p> <ul style="list-style-type: none"> - Include reference to A48 in the activity table footnote - Include reference to the overlays relevant to the activity table - Include more complete headings in the activity table
Appropriateness of objectives and policies relating to the effects management hierarchy.	<ul style="list-style-type: none"> - Rely on the existing AUP:OP provisions within chapter E3 and/or the NES-FW for managing adverse effects on rivers, lakes, streams and wetlands. - Remove Objective 4 from the Precinct Plan. - Remove Policies 4, 5, and 6 from the Precinct Plan. - Remove paragraph 3 from the Precinct description. - Amend paragraph 4: <ul style="list-style-type: none"> - The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or <u>on some matters</u> offset/compensate adverse effects, including on ecological/freshwater and mana whenua values, that may be created by these activities to the extent practicable
Appropriateness and wording of policy 6 specifically	<p>Should the proposed Policies 4, 5, and 6 be accepted as part of the plan change, the following changes are recommended:</p> <ul style="list-style-type: none"> - Remove wording "to the extent reasonably practicable, and as offered by the applicant" from objective 4 - Remove wording "while recognising that:" from policy 6 - Remove sub-points a and b from policy 6

Appendix 2. Summary of Relevant Submissions.

Submission and Submission Point	Submission Details	Technical Assessment Comment
<p>Jodi Ellis (ID 66) Submission Point: 66.2</p>	<p>Riparian planting needs to be increased to 500 metres along the Hotoe River regardless of who owns the land</p>	<p>Neutral on submission The specifics of the submission are not clear. It is not clear why riparian planning requirements should be included in the precinct plan. Approximately 3 km of the Hotoe riparian margin within the subject site is proposed to be planted as environmental compensation measures as part of the resource consent application (as required by the Overseas Investment Office (OIO) agreement: Special Condition 4(9)).</p>
<p>Department of Conservation (ID 148) Submission Point: 148.2</p>	<p>I note that the Proposal is for the entire site to be zoned 'landfill' which does not seem an appropriate level of detail for a site of this size (approx. 1020 ha), especially as much of the site would not be used as a landfill. For example, if Auckland Council is minded to approve the plan change, then any precinct and zoning that is assigned should be identified at an appropriate scale, and for instance exclude Natural Stream Management Areas, Wetland Management Areas and Significant Ecological Areas from 'landfill' zoning</p>	<p>Neutral on submission The proposed precinct plan shows the land within the precinct zoned as 'Rural – Rural Production zone' It is noted that while the site subject to the proposed plan change is approximately 1,020 ha, the location of the landfill footprint (approx. 60 ha) is restricted to sub-precinct A.</p>
<p>Department of Conservation (ID 148) Submission Point: 148.4 and 148.5</p>	<p>There does not seem to be a clear rationale for sub-precinct 2, I specifically oppose relaxing the tests that are applied to activities within waterbodies and their margins (and Natural Stream Management Areas).</p>	<p>Support Submission: As noted in this Technical Assessment the proposed discretionary activity status for reclamation and drainage in the NSMA area of sub-precinct B is not supported.</p>
<p>Department of Conservation (ID 148) Submission Point: 148.6</p>	<p>If Auckland Council is minded to approve the plan change then it could be subject to the boundaries of the areas of ecological significance within the site being redrafted in the AUP based on ground-truthed assessments.</p>	<p>Support submission Due to the large subject site, as well as, the wetland habitat and fauna values present (which are not currently mapped as SEA); this Technical Assessment supports the revision of SEA boundaries based on updated field assessments, as required.</p>

<p>Department of Conservation (ID 148) Submission Point: 148.7</p>		<p>It is recommended that this is achieved through the inclusion of an appropriate special information requirement within the precinct provisions, such as:</p> <p><u>The first consent application made under the precinct must be accompanied by an assessment identifying and evaluating areas of indigenous vegetation and the habitats of indigenous fauna in terrestrial and freshwater environments considering the factors contained in Schedule 3 Significant Ecological Areas – Terrestrial Schedule.</u></p>
<p>Department of Conservation (ID 148) Submission Point: 148.7</p>	<p>In some instances, avoidance of adverse effects is required to protect values and should not be subject to caveats. If the plan change is granted the provisions should reflect this.</p>	<p>Support submission</p> <p>The management of effects under the RMA can be represented as a continuum of responses: avoidance, mitigation and remediation, offsetting, environmental compensation, and lastly other forms of compensation. This hierarchical approach to managing effects is further supported by the AUP:OP policies and objectives, including objective E3.2.3.</p> <p>The proposed precinct provisions could be strengthened by removing the phrase “to the extent practicable” from objective 4 (I617.2) and policy 6 (I617.3). As well as, providing further clarity on the ‘effects management hierarchy’</p> <p>It is acknowledged that the AUP:OP includes provisions to avoid impacts on watercourses and wetlands, including E3.2(1) E3.2(6) E3.3(13) B7.3.1(2) (3) B7.3.2 (4).</p> <p>Furthermore, it is acknowledged that one of the principles underpinning good practice offsetting is that of ‘limits to offsetting’, whereby an offset may be inappropriate if the residual impacts cannot be fully managed because of the irreplaceability or vulnerability of the biodiversity affected; or there are no technically feasible or socially</p>

<p>Department of Conservation (ID 148) Submission Point: 148.8 and 148.9</p>	<p>I do not consider that it is appropriate for it to be at the Applicants discretion to decide whether residual adverse effects are compensated. If the plan change is granted it is unclear why the overarching provisions in the AUP, for example for ecology, are inappropriate for the proposed precinct when those provisions were robustly tested through the AUP drafting process.</p>	<p>acceptable options by which to secure gains within acceptable timeframes</p>
		<p>Support submission For reasons outlined in this Technical Assessment, including: Section 5.3: (Appropriateness of the proposed discretionary activity status for stream and wetland reclamation) Section 5.5: (Appropriateness of objectives and policies relating to the effects management hierarchy). Section 5.6: (Appropriateness and wording of policy 6 specifically)</p>

Memo (technical specialist report to contribute towards Council's section 42A hearing report)

24 September 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Simon Chapman, Biodiversity Consultant (Ecology New Zealand Limited)

Subject: Private Plan Change – Auckland Regional Landfill – Terrestrial Ecology Assessment

1. Introduction

1.1. Scope

I have undertaken a review of the private plan change, on behalf of Auckland Council. This review covers the actual and potential effects of the proposed precinct (PC24) on terrestrial ecology. The private plan change requested seeks to introduce a new precinct into the Auckland Unitary Plan operative in part (AUP: OP) – the Auckland Regional Landfill Precinct. The proposed precinct intends to facilitate the establishment of a landfill. However, the precinct provisions still require a Discretionary resource consent for a landfill within the precinct area (specifically Sub-precinct A). The extent of the proposed precinct covers an area of approximately 1,020 ha owned by Waste Management New Zealand (WMNZ) in the Wayby Valley.

1.2. Role and credentials

My role on this project is to provide Auckland Council with terrestrial ecology expertise to assist with assessing Waste Management New Zealand Limited's plan change request. I have a Bachelor of Science degree and a Post-graduate Diploma in Applied Science as well as over 20 years of experience as a consultant ecologist specialising in identifying and managing the ecological effects of large-scale and complex projects. In addition to the many ecological assessments, management plans and peer reviews I have prepared/conducted, I have also provided expert evidence on ecological matters at numerous hearings, including Council, Environment Court and Board of Inquiry hearings. My professional experience also includes the provision of expert witness inputs for applicants and consenting authorities. Recent/relevant examples of projects I have provided terrestrial ecology expertise on include SH3 Mt Messenger and Awakino Tunnel Bypasses, SH1 Southern and Northern Corridor Improvements, Escarpment Mine, Kaimai Windfarm, Awahou Quarry, Northern Interceptor, and North Harbour Watermain.

1.3. Documents Reviewed

In writing this memo, I have reviewed the following documents (some of which are more applicable to the related resource consent application but are of relevance to the private plan change request):

- Auckland Regional Landfill Private Plan Change Request - Assessment of Effects and Section 32 Analysis. Prepared by Tonkin & Taylor Ltd. Dated February 2020. (Herein referred to as the AEE).
- Auckland Regional Landfill: Assessment of Aquatic and Terrestrial: Ecological Values and Effects. Prepared by Tonkin & Taylor Ltd. Dated 30 May 2019. [Herein referred to as the 'EclA'].

- *DRAFT Ecological Management Plan*. Prepared by Tonkin & Taylor Ltd. Dated 20 February 2020. (Herein referred to as the OSSCP).
- *Memorandum: Auckland Regional Landfill s92 response - Tranche 5* addressed to Warwick Pascoe, from Rachel Signal-Ross. (Herein referred to as the s92 response tranche 5).
- *Memorandum: Auckland Regional Landfill S92 response*. Addressed to Bruce Horide from Marshall Day Acoustics. Dated 1st September 2019.
- Auckland Regional Landfill outstanding terrestrial ecology s92 response report. Prepared by Tonkin & Taylor Ltd. Dated 14 August 2020.
- Memorandum: Auckland Regional Landfill Removal of Stockpile 2 from the Auckland Regional Landfill resource consent application BUN60339589. Addressed to Warwick Pascoe, from Simonne Eldridge.
- *Bat Management Plan*. Prepared by Tonkin & Taylor Ltd. Dated 14th August 2020. (Herein referred to as the BMP).
- *Auckland Regional Landfill – Supplementary 2020 Frog Survey Report*. Prepared by Tonkin & Taylor Ltd. Dated 14th August 2020. (Herein referred to as the FSR).
- *DRAFT Hochstetter's Frog Management Plan*. Prepared by Tonkin & Taylor Ltd. Dated 14th August 2020. (Herein referred to as the HFMP).
- *Auckland Regional Landfill - Supplementary long-tailed bat report*. Prepared by Tonkin & Taylor Ltd. Dated 14th August 2020. (Herein referred to as the SLTBR).

1.4. Site Visit

At the time of preparing this memo I had been unable to undertake a site visit due to travel restrictions associated with the prevailing COVID-19 alert level. However, I undertook a 'virtual' site walkover with one of the applicant's ecologists (Justine Quinn of Tonkin and Taylor) on the 13th of August 2020. The virtual site walkover involved a 2.5-hour Microsoft Teams meeting during which a shared screen was used with GIS software to assist the applicant's ecologist in explaining the site's current ecological values, and the locations and extents of the project proposed footprint areas and ecological investigations. A site visit will be undertaken prior to the hearing.

2. Key terrestrial ecology issues

The key terrestrial ecology issues are summarised below and described in detail within section 4 of this memo.

- The plan change request relies on the site being an appropriate location for the activity
- The proposed discretionary activity status for wetland (and stream) reclamation is not appropriate
- The effects of the proposed plan change on terrestrial ecology have not been considered - only the effect of the activity
- The potential adverse ecological effects on indigenous fauna from a plan change and the flow on effect of this have not been considered
- The objectives and policies relating to the effects management hierarchy are not appropriate
- There are contradictions within the wording for significant ecological areas and effects

- The wording of policy 6 is not appropriate

3. Applicant's assessment

The Assessment of Environmental Effects (AEE) states the legal descriptions of the land parcels affected by the proposal are provided in table 1.3. of the planning report. The overall site area is approximately 1,020 ha (Subject Site), with Sub-precinct A (where a potential landfill would be located) occupying 60 ha. The related resource consent application shows the proposed landfill footprint occupying approximately 60 ha of Sub-precinct A (Project Footprint).

Section 2.3 of the AEE and section 2 of the Ecological Impact Assessment (EclA) describes the wider site including the vegetation, ecosystems, fauna presence and habitat, watercourses and wetlands. These descriptions are considered appropriate and adequate to make an informed assessment of the proposed plan change.

4. Assessment of effects on terrestrial ecology

The key considerations in relation to the potential effects of the plan change on terrestrial ecological values are detailed below.

4.1. The appropriateness of the site as a location for this precinct:

a. Methodology

The consideration of ecological values in selecting the preferred site was limited to the use of existing Auckland Unitary Plan overlays such as Significant Ecological Areas (SEA), Natural Stream Management Areas (NSMA) and Wetland Management Areas (WMA). Section 2.2 of the AEE includes a summary of the planning and ecological considerations that limited and defined the overall site selection. The section summarises that the placement was the most appropriate for landfill development subject to design and construction methods, and that it followed the Technical Guidelines for Disposal to Land¹.

However, the guidelines state that initial investigations should include an assessment of the sensitivity of biota and fauna at the site, as well as downstream receiving environments. The guidelines further note that careful siting of a landfill is fundamental to protect the environment from potential adverse effects associated with the disposal of waste materials.

The undertaking of ecological surveys after the site has been selected is not considered to have followed best practise guidance, and therefore the appropriateness of creating a precinct that is intended to make the provision of a landfill there is questionable.

- **Outcome Sought:** Commentary only. It is the opinion of this Technical Assessment that, from a terrestrial ecology perspective, other sites are likely to be more appropriate for this activity and the terrestrial ecology assessment and measures of avoidance in selecting the site have not been adequately applied.

b. Lack of consideration from an ecological standpoint on the proposed plan change:

The plan change documents submitted in relation to terrestrial ecology are the same as those submitted for the landfill consent application. While it is acknowledged that much of the information would be the same within both proposals, a specific evaluation of the proposed plan change, and its potential effects on terrestrial ecology, has not been provided. Explanation of the proposed differences between overlays and the precinct have not been addressed or assessed by a terrestrial ecologist.

¹ WasteMINZ, Technical Guidelines for Disposal to Land, August 2018.

- **Outcome Sought:** Commentary only.

4.2. Appropriateness of the proposed discretionary activity status for stream and wetland reclamation under the plan change:

The proposed plan change seeks to change the activity status of stream and wetland reclamation from non-complying to discretionary (for freshwater systems outside overlays and a section of NSMA within sub-precinct B). However, it is considered that the existing policy framework of the AUP: OP adequately recognises municipal landfills as infrastructure. The existing non-complying activity status attributed to stream and wetland reclamation is appropriate even when considering effects associated with municipal landfills. It is noted that if the landfill does not meet the 'specified infrastructure' definition in the NES-FW, wetland reclamation would be prohibited under the NES-FW regardless.

- **Outcome sought:** Rely on the AUP: OP provisions within chapter E3 and/or NES-FW for managing future proposed reclamation at a resource consent stage.
 - Remove A8 and A9 from the activity table (617.4.1) from the Precinct Plan.
 - Remove A1 from the activity table (617.4.2) from the Precinct Plan.
 - This essentially removes sub-precinct B, and therefore reference to sub-precinct B should also be removed from the plan.

4.3. Activity status change effects on indigenous terrestrial flora and fauna:

The precinct provisions that relate to the management of effects on indigenous terrestrial flora and fauna will primarily come under the activity statuses relating to wetlands and streams at the site. The change to the reclamation of streams and wetlands outside overlays from a non-complying activity to discretionary (proposed activities A8 and A9) may adversely affect the level of management/consideration required for fauna such as hochstetters frog and invertebrates (i.e. mortality and habitat/resource loss) within these systems. This then weakens the assessment framework for these effects. The AUP: OP already provides a clear and robust framework (i.e. objectives and policies found under E3) for discretionary and non-complying activities on freshwater resources and their associated biodiversity values and it is not considered appropriate to diminish this.

Activity table 617.4.1 (A14) also proposes a general reduction to activities that have been assigned as non-complying under the AUP: OP, reducing the status to discretionary. This could then be applied to activities within E15 and E3 which could reduce the level of consideration and effects management required for terrestrial biodiversity impacts. In addition, it is considered that the assessment of the activities and their subsequent allocation within the AUP: OP as non-complying are the appropriate level for that activity.

- **Outcome Sought:** Remove A8, A9 and A14 from the activity table (617.4.1) from the Precinct Plan.

4.4. Conflicting activity statuses in national policy and the proposed precinct:

On September 3rd, 2020, the National Environmental Standards for Freshwater Management (NES-FW) became operative (in part) and makes earthworks, diversion, and drainage within a natural wetland a prohibited activity (section 53). This policy has resulted in a conflict with the proposed plan change activity statuses (proposed activities A8 and A9).

- **Outcome sought:** Rely on the AUP: OP provisions within chapter E3 and/or NES-FW for managing future proposed reclamation at a resource consent stage.

- Remove A8 and A9 from the activity table (617.4.1) from the Precinct Plan.

4.5. Redundant objectives and policies relating to the effects management hierarchy:

Paragraph 3 of the precinct description (I6171.1), Objective (I617.2) 4, 5 and Policies (I617.3), 4, 5 and 6 of the Precinct Plan set out a framework for managing adverse effects of activities associated with the development and operation of the Auckland Regional Landfill. The Resource Management Act (RMA), National Policy Statement for Freshwater Management (NPS-FM), NES-FW and AUP: OP sufficiently provide for this framework including the consideration of offsetting and compensation of significant residual adverse effects that cannot practically be avoided, remedied or mitigated. This is not considered necessary as the existing provisions of the RMA and AUP: OP sufficiently provide for this framework including the consideration of offsetting and compensation of significant residual adverse effects that cannot practically be avoided, remedied, or mitigated.

- **Outcome sought:** Rely on the AUP: OP provisions within chapter E3 and/or the NPS-FM and NES-FW for managing adverse effects on rivers, lakes, streams, and wetlands.
 - Remove Objective 4 from the Precinct Plan.
 - Remove Policies 4, 5, and 6 from the Precinct Plan.
 - Remove paragraph 3 from the Precinct description
 - Amend paragraph 4 from the precinct description:
 - The objectives and policies of the Precinct requires a full assessment of potential effects and a requirement to avoid, remedy, mitigate, or on some matters, offset/compensate adverse effects, including on ecological/freshwater and mana whenua values. ~~that may be created by these activities to the extent practicable.~~

4.6. Appropriateness of Policy 6 and Objective 5:

Should the proposed Policies 4, 5, and 6 be accepted as part of the plan change, there are further concerns with the wording of policy 6 specifically. These concerns relate to:

- The pre-empting an inability to fully manage the significant adverse effects of an activity
- A lack of clarity regarding the preferred ratio included
- The pre-empting of an increased time lag in delivering offsets and compensation

Generally, proposed policy 6 undermines the need to undertake an appropriate assessment of effects including significant biodiversity loss through time lags and appropriate means to manage those effects at a resource consent stage. Proposed policy 4 and 5 then relate directly to this policy.

Objective (1617.2 (5)) of the proposed precinct plan states that “*Effects on the ecological... ..from works within any Significant Ecological Area overlay or Wetland Management Overlay areas are avoided...*”. Note that this is an oxymoron as any works in the SEA will have an effect therefore this sentence should be removed from the objective.

- **Relief sought:** Should the proposed policies 4, 5 and 6 be accepted as part of the plan change, then the following changes are recommended:
 - Remove wording “to the extent reasonably practicable, and “as offered by the applicant” from objective 4
 - Reword Objective 5 to - “Works within any Significant Ecological Area overlay, or Wetland Management Area overlay, or Natural Stream Management Area overlay areas are avoided. Where works cannot be

avoided as far as practicable effects on the ecological and mana whenua values mana whenua values from works within these overlays any Natural Stream Management Area overlay are avoided where practicable or are otherwise minimised. Effects include but are not limited to those outlined in D9.2 (a-q)".

- Remove wording "while recognising that:" from policy 6
- Remove sub-points a and b from policy 6

4.7. Overall, it is the opinion of this Technical Assessment that, from a terrestrial ecology perspective, other sites are likely to be more appropriate for this activity. The provided assessment of terrestrial ecological effects, consideration of terrestrial biodiversity values and subsequent measures of avoidance in selecting the site have not been adequately applied.

4.8. Statutory Considerations

Key Statutory Considerations relating to the matters of this terrestrial technical assessment are summarised below. The AUP: OP 2016, Wildlife Act 1953, and the draft National Policy Statement for Indigenous Biodiversity 2019 all contain provisions that are relevant to the avoidance and management of adverse effects on indigenous terrestrial flora, fauna, and ecosystems. These documents also provide national direction on the maintenance, enhancement and protection of indigenous biodiversity values through development.

a. Wildlife Act 1953:

All indigenous bats, birds, frogs, lizards, and some invertebrates (including the *Paryphanta* snails found in the plan change area), are fully protected under the Wildlife Act 1953. It is an offence to disturb, harm, or remove them without an authority granted by the Department Conservation. This includes the disturbance of potential habitat even if the presence of native species has not been specifically surveyed.

b. National Policy Statement: Freshwater Management 2020 (NPS-FM).

As the application relates to works within and around streams and wetlands, the NPS: FW is considered relevant to this application. Objectives of the NPS include:

- Freshwater is managed in a way that gives effect to Te Mana o te Wai
- Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained [...]
- There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted
- The loss of river extent and values is avoided to the extent practicable
- The habitats of indigenous freshwater species are protected

c. Draft National Policy Statement for Indigenous Biodiversity 2019 (NPS-Bio)²

The application proposes activities which will influence indigenous biodiversity, and the NPS-Bio is considered relevant, although it is currently a draft document and has not yet come into effect. The objectives in the NPS-Bio relate to the maintenance, integrated management, restoration and enhancement of indigenous biodiversity and allows for the recognition of the importance of involving

² Draft National Policy Statement for Indigenous Biodiversity (2019). I have undertaken a brief review of this policy statement in relation to the application, however it is noted that it has not come into effect yet.

community and the principles of the Treaty of Waitangi. Of relevance to this proposed plan change is Policy 2: *“to ensure that local authorities adopt a precautionary approach towards proposed activities with effects on indigenous biodiversity that are uncertain, unknown, or little understood but potentially significant”*.

d. Auckland Unitary Plan: Operative in part (AUP: OP) Objectives and Policies

The regional provisions of the AUP: OP include various provisions to maintain and improve indigenous biodiversity, avoid and manage adverse effects and to manage development that affects terrestrial systems. The relevant terrestrial ecology objectives and policies in relation to indigenous biodiversity and including wetlands are found in Chapter E3, E15, D9 of the AUP: OP

- **Chapter E3** seeks to protect Auckland's lakes, rivers, streams and wetlands with high natural values from degradation and permanent loss. It also directs that Auckland's lakes, rivers, streams and wetlands are restored, maintained or enhanced.
- **Chapter E15** Indigenous Vegetation Management and Biodiversity seeks to maintain and enhance indigenous biodiversity in areas that are already degraded, and to protect areas of indigenous vegetation when adverse effects are to be expected from new land uses.

E15.2. Objectives

E15.2 (1) Ecosystem services and indigenous biological diversity values, particularly in sensitive environments, and areas of contiguous indigenous vegetation cover, are maintained or enhanced while providing for appropriate subdivision, use and development.

E15.2 (2) Indigenous biodiversity is restored and enhanced in areas where ecological values are degraded, or where development is occurring

E15.3 (4) Protect, restore, and enhance biodiversity when undertaking new use and development through any of the following:

(b) requiring legal protection, ecological restoration and active management techniques in areas set aside for the purposes of mitigating or offsetting adverse effects on indigenous biodiversity.

- **Chapter B7** Natural Resources and the objectives and policies in section B7.2 seek to ensure that indigenous biodiversity is maintained and degraded habitats enhancement, the loss of indigenous biodiversity is minimised and that any adverse effects are avoided, remedied or mitigated.
- **Chapter D9** Significant Ecological Areas Overlay seeks to provide for the appropriate management of areas that contain indigenous flora and fauna or habitat for fauna, ensuring that healthy diverse ecosystems are maintained in the Auckland Region. It allows for the protection of these areas from inappropriate development.

5. Submissions

At the time of writing this report, a total of 412 submissions had been received on the Private Plan Change request. Of these, 68 raised specific matters relevant to terrestrial ecology. The majority of submissions relating to the matters of this technical assessment raised general concerns but did not make specific comments or requests relating to the provisions of the proposed precinct. The submissions relating to aspects of this technical assessment can be summarised broadly into the following themes:

- Concerns regarding adverse effects of the terrestrial environment, including loss of indigenous and threatened habitat, fauna, and flora.

- Requesting the protection of the existing freshwater ecological environment (including wetlands).
- Concern regarding the magnitude of the proposed stream and wetland loss
- Concerns regarding the application of the effect's management hierarchy.
- Concerns regarding the proposed precinct being contrary to the NPS- Indigenous Biodiversity and AUP: OP provisions
- Concerns about the risk of bypassing existing environmental regulations.
- Concerns regarding the location of the proposed precinct concerning terrestrial fauna, flora, and ecosystems

The terrestrial ecology matters raised in submissions have largely been covered in previous sections of this technical assessment above, specifically:

- Section 4.2: (The Plan Change Request relies on the site being an appropriate location for the activity)
- Section 4.3 (Appropriateness of the proposed discretionary activity status for wetland reclamation)
- Section 4.3 (a) and (b) (Environmental Effects on Indigenous Fauna and Flora)
- Section 4.4: (Appropriateness of objectives and policies relating to the effects management hierarchy).
- Section 4.5: (Appropriateness and wording of policy 6 specifically)

Many of the submissions raised concerns regarding the potential risks and adverse effects of contaminants (including sediment, stormwater, and leachate) on the Hotoe River and/or Kaipara Harbour. These effects and the effectiveness of the proposed precinct to manage these effects is assessed by separate council specialists.

5.1. Further Comment on submissions

It is considered necessary to provide further comment on two submissions. My assessment is based on the plan change only (as I note that these two submissions appear to have been submitted for both the plan change and the related resource consent application).

5.2. Department of Conservation c/- Chris Rendall (Submission #148)

Submission number	Submission Point Summary	Technical Assessment Comment
148.2	Issues with the proposed zone covering the entire area (1020 ha) when not all of this land is proposed for landfill. More detail in zoning is considered appropriate especially when considering the Natural Stream Management Areas, Wetland Management Areas and Significant Ecological Areas. The idea is posed that these areas should be excluded from the overall 'landfill' zoning	<p><i>Support submission in part.</i></p> <p>The proposed precinct plan shows the land within the precinct zoned as 'Rural – Rural Production zone' and the provisions under this will be in effect. The existing provisions relating to the SEA and NSMA overlays are noted and would be applied over the precinct zones and apply first.</p> <p>The proposed non-complying activity status for reclamation and drainage within these overlays (outside sub-precinct B) is also noted.</p>

Submission number	Submission Point Summary	Technical Assessment Comment
148.4 and 148.5	No clear rationale for the proposed sub precinct 2 in relation to the alteration (relaxation) of their activity status.	<p><i>Support Submission.</i></p> <p>As noted in this Technical Assessment, the proposed discretionary activity status for reclamation and drainage in the NSMA area of sub-precinct B is not supported.</p>
148.6	Proposes that if the plan change goes ahead then it could be subject to the boundaries of the areas of ecological significance within the site being redrafted in the AUP based on ground-truthed assessments.	<p><i>Support submission.</i></p> <p>Providing the process allows for it, this Technical Assessment would support the revision of SEA boundaries based on current field assessments, as appropriate.</p> <p>Note that potential ecological value of an area must be considered, and not just the current ecological values.</p>
148.7	In some instances, avoidance of adverse effects is required to protect values and should not be subject to caveats. If the plan change is granted the provisions should reflect this.	<p><i>Support submission.</i></p> <p>The management of effects under the RMA can be represented as a continuum of responses: avoidance, mitigation and remediation, offsetting, environmental compensation, and lastly other forms of compensation. This hierarchical approach to managing effects is further supported by the AUP: OP policies and objectives, including objective E3.2.3. and the NPS-FW (section 3.2.1).</p> <p>The proposed precinct provisions could be strengthened by removing the phrase “to the extent practicable” from objective 4 (I617.2) and policy 6 (I617.3). As well as, providing further clarity on the ‘effects management hierarchy’</p> <p>The AUP: OP includes provisions to avoid impacts on watercourses and wetlands, including E3.2(1), E3.2(6), E3.3(13), B7.3.1(2) and (3), and B7.3.2 (4).</p> <p>Furthermore, it is acknowledged that one of the principles underpinning good practice offsetting is that of ‘limits to offsetting’, whereby an offset may be inappropriate if the residual impacts cannot be fully managed because of the irreplaceability or vulnerability of the biodiversity affected; or there are no technically feasible or socially acceptable options by which to secure gains within acceptable timeframes</p>
148.8 and 148.9	It is inappropriate for it to be at the applicant’s discretion to decide whether residual adverse effects are compensated. If the plan change is granted it is unclear why the overarching provisions in the AUP, for example for ecology, are inappropriate for the proposed precinct when those provisions were robustly tested through the AUP drafting process.	<p><i>Support submission.</i></p> <p>For the reasons outlined in Section 2 of this assessment.</p>

5.3. Forest and Bird (Submission #394)

Submission number	Submission Point Summary	Technical Assessment Comment
4, 6.1	Threatened and at-risk fauna could be adversely affected by the proposal if the plan change eventually allows for a landfill and areas of wetlands/stream are not protected by robust rules.	<p><i>Support Submission.</i></p> <p>The provision of weaker provision for the reclamation of fauna habitat (i.e. Hochstetter's frog habitat, avifauna habitat) via wetlands and streams is not considered appropriate. This is addressed by this technical memo in section 2.0.</p>
6.2, 6.3	Avoidance of the SEA on its own is not enough to protect the indigenous biodiversity.	<p><i>Neutral.</i></p> <p>This is more appropriately considered at the resource consent stage, although objectives and policies in the proposed precinct plan should be in alignment with D9 and not altered in any way.</p> <p>The appropriateness of Objective 5 of the proposed precinct and protection of effects from works in the SEA has been commented on in section 4.5, and I have re-worded the objective in Section 6.1 below to reflect this.</p> <p>Other inconsistencies between the proposed objectives and policies and those in D9 can be summarised as a lack of consideration for terrestrial fauna, biodiversity buffers and complexes and habitats.</p> <p>Specifically, D9 (2) (a-q) – promotes the enhancement, restoration and protection of the ecosystem services, the protection of ecosystem linkages and complexes, avoidance of disturbance to threatened fauna,</p> <p>The direction in the policies of D9 are far more definitive and direct when it comes to terrestrial fauna protection and the loss of ecosystem services as well as the physical loss and should take precedence over the precinct ones.</p> <p>It is expected that the last sentence in the precinct objectives will allow for the D9 policies to prevail, however there is some uncertainty with this, and this should be more clearly stated that what has been proposed.</p>

6. Conclusions and recommendations

While acknowledging that a site selection process for a landfill will always involve trade-offs between different values and constraints, from a terrestrial ecology perspective I consider that other sites are likely to be more appropriate for the activities that would be facilitated by the plan change. The ecological assessment submitted with the plan change request does not directly address the effects of the plan change on terrestrial ecology. However, I acknowledge that the resource consent application submitted for the activity in parallel to this plan change request has provided additional detail on terrestrial ecological values and effects than what typically be submitted with a stand-alone plan change request. However, the generation of that level of detail after the site had been selected remains a key issue.

Notwithstanding my comments above, the actual and potential adverse ecological effects of a landfill activity on terrestrial ecological values could be managed through a robust application of the effects management hierarchy, preferably achieving a net gain of ecological value outcome. Note that the EIANZ Ecological Impact Assessment Guidelines³ outline that effects in the 'very high' level of effect category are unlikely to be acceptable on ecological grounds alone (even with compensation proposals), and that activities having 'very high' adverse effects should be avoided (Roper-Lindsay *et al.*, pg 84). However, the EIANZ guidelines also outline that where a 'very high' level of adverse effects cannot be avoided, a net biodiversity gain would be appropriate (Roper-Lindsay *et al.*, pg 84).

6.1. Recommended Modifications to Precinct Provisions (PC42)

Auckland Regional Landfill Precinct (I617)

I617.1 Precinct Description

The precinct applies to the Auckland Regional Landfill and its surrounds. Its purpose is to provide for the potential existence of, and enable the efficient construction and operation of, a landfill and associated land and activities in recognition of its role in providing the long term, safe disposal of solid waste from Auckland and surrounding regions, and for enabling renewable energy generation from the biomass within the landfill.

The Auckland Regional Landfill Precinct has two sub-precincts: Sub-precinct A, which identifies the proposed landfill location, and Sub-precinct B which identifies an area of the precinct where works within the Natural Stream Management Area are subject to a different activity status than the overlay. The remaining land within the precinct will be used for a range of activities associated with the landfill operations and energy generation. These associated activities include (but are not limited to) bin exchange area, stormwater treatment, access roads, soil stockpiles, gas and leachate collection and treatment, workshops, office facilities, and clay borrow.

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

The land and the surrounding waterways, particularly the Hōteu River, have significant value to mana whenua in terms of historical, spiritual and cultural associations. Areas within and adjacent to the Auckland Regional Landfill Precinct have significant ecological values (e.g. the Sunnybrook Reserve). The objectives and policies of the Precinct requires a full assessment of potential and actual effects (including cumulative and indirect effects) and the requirement to avoid, remedy, or mitigate these. Offset should only be undertaken where efforts to avoid, minimise and mitigate have been undertaken to the extent practicable and should adhere to best practise offsetting in New Zealand⁴. Compensation should be used only as the last

³ Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. 2018. Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

⁴ E.g. Maseyk, Ussher, Kessels, Christensen & Brown (2018) *The Biodiversity Offsetting under the Resource Management Act Guidance Document*, New Zealand Government *et al.* (2014). *Guidance on Good Practice Biodiversity Offsetting in New Zealand* and AUP: OP Appendix 8: Biodiversity Offsetting.

~~management option for residual effects not able to be addressed by the previous steps. Effects to be considered include or offset/compensate adverse effects, including those on ecological/freshwater and mana whenua values, that may be created by these activities. to the extent practicable.~~

The underlying zoning of land within this precinct is Rural – Rural Production zone.

1617.2 Objectives [rp/dp]

1. The development and continued operation of the Auckland Regional Landfill is enabled, recognising its regional significance as infrastructure, and recognising the benefits of biomass being used for renewable energy generation.
2. Human health is protected from adverse effects of operational or closed landfills.
3. The Auckland Regional Landfill is designed and operated so that the adverse effects of discharges to land and water from the landfill are avoided, remedied or mitigated.
- ~~4. Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.~~
5. ~~Effects on the ecological and mana whenua values from wWorks within any Significant Ecological Area overlay, or Wetland Management Area overlay, or Natural Stream Management Area overlay areas are avoided. Where works cannot be avoided as far as practicable, effects on the ecological and mana whenua values~~ mana whenua values from works within any Natural Stream Management Area overlay are avoided where practicable or are otherwise minimised. Effects to consider include but are not limited to those outlined in D9.2 (a-g).
6. The mauri of freshwater and indigenous biodiversity within those areas of the precinct not required for operations associated with the development and continued operation of the Auckland Regional Landfill is maintained and consistent with being enhanced over time.

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, except where there is a conflict, in which case these objectives take precedence.

1617.3 Policies [rp/dp]

1. Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation.
2. Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied or mitigated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan's Accidental Discovery Rule (E11.6.1).
3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:

- a. adverse effects on the quality of freshwater, including from contamination and sediment;
- b. adverse effects from contaminants, and the potential for these to enter freshwater from both point and non-point sources;
- c. adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and
- d. adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply;
- e. adverse effects on the quality of air, including from the discharge of contaminants and odour;

including through the adoption of the best practicable option for the treatment and discharge of stormwater, the use of industry best practice lining system and the provision of an appropriate buffer within the precinct

- ~~4. Subject to policy 5, provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill.~~
- ~~5. Subject to policy 6, require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.~~
- ~~6. Where effects cannot be avoided, remedied or mitigated, provide for offsetting or compensation, thereby enabling the Auckland Regional Landfill as infrastructure, while recognising that:

 - ~~a. not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
 - ~~b. any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference — within the precinct, within the Hōteō River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~~~

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4).

I617.4 Activity Table

Table I617.4.1 Activity table specifies the activity status of land use and development activities in the Auckland Regional Landfill Precinct pursuant to sections 9 and 11, 13, 14 and 15 of the Resource Management Act 1991. Any reference to an activity includes its construction, operation and maintenance. This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed⁵.

Table I617.4.1 Activity Table (rp/dp)

⁵ Specifically, the rules in this table are intended to replace E3.4.1 (A49) E13.4.1 (A9), E14.4.1 (A160), and H19.8.1 (A67), and is intended to apply instead of any plan change to make landfills or associated activities non-complying.

Activity		Activity status
New landfills		
(A1)	Landfill in Sub-precinct A	D
(A2)	Discharges to air from landfills in Sub-Precinct A	D
(A3)	Discharges to land and water from landfills in Sub-precinct A that are otherwise categorised as non-complying	D
(A4)	Landfill outside of Sub-precinct A	NC
(A5)	Discharges to air, land and water from landfills outside of Sub-Precinct A	NC
Existing landfills		
(A6)	Discharges to air from existing landfills in Sub-Precinct A	RD
(A7)	Discharges to land and water from existing landfills in Sub-precinct A unless a more lenient activity status applies	RD
Activities in lakes, rivers, streams and wetlands		
(A8)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands outside overlays that are otherwise categorised as non-complying.	D
(A9)	Reclamation, drainage, diversion or disturbance of any lakes, rivers, streams (including intermittent streams) and wetlands inside overlays unless a more lenient activity status applies	NC
Renewable energy		
(A10)	Energy generation from waste biomass, that is otherwise categorised as non-complying	D
(A11)	Discharges to air, land or water from energy generation from waste biomass, that are otherwise categorised as non-complying	D
General		
(A12)	Office or workshop associated with landfill	D
(A13)	Bin exchange area	D
(A14)	Except for (A4), (A5) and (A9) above, any activity classified as a non-complying activity elsewhere in the Unitary Plan associated with any landfill activity	D
(A15)	Any landfill activity that does not comply with the restricted	NC

Activity		Activity status
	discretionary or discretionary activity standards in I617.6	

Table I617.4.2 Activity Table – Sub-precinct B

Table I617.4.2 specifies the activity status of activities in, on, under, or over the bed of lakes, rivers, streams and wetlands within Sub-precinct B, pursuant to sections 13 and 14 of the Resource Management Act 1991. This Activity Table applies instead of any other rule in the Unitary Plan for the purposes of the activities listed.⁶

Activity		Activity status
(A1)	Works within lakes, rivers, streams (including intermittent streams) and wetlands within Sub-precinct B, including reclamation, drainage, diversion or disturbance of any watercourses, or construction of structures unless a more lenient activity status applies.	D

I617.5. Notification

1. Any application for private plan changes for an activity listed in Table I617.4.1 Activity table above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991, except where I617.5(2) applies.
2. Any application under Rule I617.4.1 (A1), (A2), (A4), (A5) or (A15) will be publicly notified.
3. When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I617.6 Standards

I617.6(1) Restricted Discretionary Standards

Activities listed as restricted discretionary activities in Table I617.4.1 must comply with the following restricted discretionary activity standards.

1. The discharge must be associated with an existing, legally authorised landfill or ancillary activity.
2. Any placement of waste shall only occur within Sub-Precinct A, shown on Precinct Plan 1.
3. A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be one of the following types:
 - a. Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s); or
 - b. Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or

⁶ Specifically, the rules in this table are intended to replace E3.4.1 (A33) and E3.4.1 (A49) within the sub-precinct.

- c. Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.
4. There shall be no offensive or objectionable odour at the Precinct boundary caused by the landfilling operation, in the opinion of a suitably qualified enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
5. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (~~except Sub-precinct B~~).
6. The maximum airspace volume of the landfill must not exceed 28.5 Mm³.

I617.6(2) Discretionary Standards

Activities listed as discretionary activities in Table I617.4.1 must comply with the following discretionary activity standards.

1. Any placement of waste shall only occur within Sub-Precinct A, shown on Precinct Plan 1.
2. A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be one of the following types:
 - a. Type 1 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, and 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-9}$ m/s); or
 - b. Type 2 lining system (Leachate drainage material, with underlying cushion geotextile to protect the geomembrane, 1.5 mm HDPE geomembrane, Geosynthetic clay liner (GCL), or 600 mm compacted clay with a coefficient of permeability $k < 1 \times 10^{-8}$ m/s); or
 - c. Any other lining system that provides equal or better protection than a Type 1 or Type 2 lining system described above.
3. There shall be no offensive or objectionable odour at the Precinct boundary caused by the landfilling operation, in the opinion of a suitably qualified enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
4. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or in any Natural Stream Management Area overlay (~~except Sub-precinct B~~).
5. The maximum airspace volume of the landfill must not exceed 28.5 Mm³.

I617.7. Assessment – controlled activities

There are no controlled activities in this precinct.

I617.8. Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

1. For discharge of contaminants into air from all restricted discretionary activities (A6):
 - a. the matters in Policy E14.3(1); and
 - b. location of site and activity; and
 - c. site and plant layout.
 - d. quantity, quality and type of discharge, including biological contaminants, and any effects arising from that discharge;
 - e. sensitivity of receiving environment and separation distances between the activity and any sensitive land uses;
 - f. protocols for waste acceptance;
 - g. odour, dust, visible emissions and hazardous air pollutant mitigation measures;
 - h. monitoring requirements and management plans; and
 - i. Closure and after-care plans (if the landfill is likely to close within the duration of the consent).

2. For other discharges from all restricted discretionary activities (A7):
 - a. the quality and quantity of any discharge including methods for the treatment and disposal of contaminants;
 - b. the method of discharge and adverse effects arising from the method chosen;
 - c. the best practicable options for reducing adverse effects;
 - d. the location of any discharge point;
 - e. the rate and frequency of any discharge;
 - f. monitoring requirements, management plans and consent duration;
 - g. the effects on mana whenua values; and
 - h. closure and after-care plans (if the landfill is likely to close within the duration of the consent).

I617.8.2 Assessment criteria

Discharges to air from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

1. The degree to which Auckland Ambient Air Quality Targets are likely to be met where people are likely to be exposed to the specified contaminants for the relevant averaging period.
2. Whether the amount of separation between the activity discharging contaminants into air and existing or potential activities sensitive to the air discharges is sufficient to mitigate adverse effects on the environment, health and amenity
3. The extent to which adverse effects are avoided, remedied or mitigated including appropriate emissions control technology and use of management practices.
4. Where applicable, the degree to which offsetting can remedy or mitigate adverse effects considering the proximity of the offset to where the effects of the discharge occur and the effective duration of the offset
5. Whether there are practicable location and method options that cause less adverse effects and can still achieve the applicant's objectives
6. The extent to which the odour and dust level meet the expectations for the Medium air quality – dust and odour area (Rural).
7. Whether the assessment methods, including monitoring and modelling are appropriate to the scale of the discharge and any potential adverse effects

8. Whether discharge into air are minimised as far as practicable, where appropriate through
 - a. use of best practicable option emissions control and management practices: or
 - b. minimisation of fugitive emissions:
9. the adequacy of the site management plan including:
 - a. operation of the site
 - b. placement and compaction of waste material
 - c. daily operating procedures
 - d. waste acceptance controls and monitoring;
 - e. response to natural hazards and unexpected discharges;
 - f. Vermin and bird management;
 - g. load inspection records; and
 - h. monitoring, testing and sampling documentation
10. the adequacy of the site aftercare plan including:
 - a. aftercare activities to address the risk posed by the contaminants to the environment: and
 - b. timing and standard of aftercare activities

Discharges to land and water from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

1. potential adverse effects (including cumulative effects) are appropriately minimised or mitigated, taking into consideration all of the following:
 - a. the nature of the contaminants and associated discharge to the receiving environment;
 - b. the sensitivity of the receiving environment, and its susceptibility to the adverse effects of the contaminants;
 - c. the extent to which contaminants from the site contribute to incremental and cumulative adverse effects on receiving environments including adverse effects on biodiversity, community and mana whenua uses and values
 - d. whether it is practicable to reduce existing adverse effects including site and operational constraints;
 - e. the adequacy of the site management plan including:
 - I. operation of the site;
 - II. placement and compaction of waste material;
 - III. daily operating procedures;
 - IV. waste acceptance controls and monitoring;
 - V. response to natural hazards and unexpected discharges;
 - VI. Vermin and bird management;
 - VII. load inspection records; and
 - VIII. monitoring, testing and sampling documentation
 - f. the adequacy of the site aftercare plan including:
 - I. aftercare activities to address the risk posed by the contaminants to the environment; and
 - II. timing and standard to aftercare activities

I617.9. Special information requirements

There are no special information requirements in this precinct.

I617.10. Precinct plan

Memo (technical specialist report to contribute towards Council's section 42A hearing report)

24/09/2020

To: Ryan Bradley, Principal Planner, Auckland Council
From: Aslan Perwick (Pattle Delamore Partners Ltd)

Subject: Private Plan Change – Auckland Regional Landfill – Groundwater / Aquifers / Water Resources Assessment

1.0 Introduction

1. I have undertaken a review of the private plan change, on behalf of Auckland Council in relation to groundwater effects.
2. My name is Aslan Michael Perwick. I hold the role of Groundwater Services Leader at Pattle Delamore Partners Ltd, a role I have held since 2016. I am a hydrogeologist with over 12 years' experience. I hold Bachelor of Science (Geology) from the University of Auckland, New Zealand, and Master of Science (Hydrogeology) from the University of Birmingham, United Kingdom. I am a member of the International Association of Hydrogeologists, and Australasian Tunnelling Society (ATS).
3. I have recent and relevant experience as a groundwater specialist. I have completed numerous detailed groundwater investigations and assessments for large scale civil construction and primary resource related projects, in both New Zealand and Australia. This work has included, investigation drilling, groundwater monitoring and testing, geophysical surveying and analysis, analytical and numerical groundwater modelling, groundwater abstraction design and installation, large-scale hazardous waste storage (solid and liquid) facility seepage assessments, groundwater contaminant testing and assessment, groundwater plume assessments, groundwater remediation.
4. In writing this memo, I have reviewed the following documents:
 - Auckland Regional Landfill Private Plan Change Request –Assessment of Effects and Section 32 Analysis (T+T July 2019).
 - Auckland Regional Landfill – Risk Management Assessment (AECOM, 23 May 2019).
 - Auckland Regional Landfill Assessment of Environmental Effects (T+T May 2019) and associated supporting Technical Reports.
 - Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 15 November 2019)
 - Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 3 February 2020)
 - Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 4 March 2020)
 - Submissions – Online Submission Report – summary of PPC42 submissions, prepared by Auckland Council.

2.0 Key Issues relating to Groundwater / Aquifers / Water Resources

1. Proposed Auckland Regional Landfill Precinct (PARLP) Objectives (I617.2) do not incorporate any objectives to safeguard against adverse effects to the underlying and regionally significant potable aquifer.
2. The PARLP does not include specific provisions for water quality protection and specification of a physical boundary (envelop) whereby water quality degradation will be spatially contained within (groundwater and surface water); over the entire life of the PARLP.
3. PARLP does not include Objectives, Polies, and/or Rules regarding the measurable and permanent diversion of water from recharging the underlying and regionally significant potable aquifer.
4. The PARLP does not contain sufficient Council discretion with respect to “Assessment Criteria I617.8.2 (Discharges to land and water from legally established landfills)”.
5. The PARLP does not contain sufficient rules with respect to certain drilling activities within Sub-Precinct-A, which would be considered Permitted Activities when applying the underlying Auckland-wide rules.

3.0 Applicant’s assessment

1. The basis for the precinct proposed by WMNZ is that this site is unique in an Auckland context, providing a combination of features which resulted in its selection following an extensive site selection process that has taken nearly a decade. Following selection of the broader site, further more detailed assessment was undertaken to confirm that Valley 1 is suitable for a landfill development.
2. Section 4.6 of the private plan change request provides an assessment of the effects on groundwater, supported by a Hydrogeological assessment and a Water quality baseline Monitoring Report (Technical Reports E and F).
3. The applicant’s assessment of the groundwater and aquifer systems beneath the proposed PARLP is that the regional (deeper) potable aquifer zone is well separated (hydraulically) from the upper aquifer (shallow groundwater) directly beneath Sub-Precinct A.
4. The applicant acknowledges that should leachate escape into the surrounding environment, it has the potential to migrate into and contaminate groundwater. However, this can largely be avoided by the design and construction of an appropriate landfill lining system and the precinct includes a standard that the lining system must meet. Policy 3 of the proposed precinct also requires the adoption of a best practice lining system and appropriate waste acceptance criteria.
5. The applicant states that the existing suite of objectives, policies and rules in the Unitary Plan that control effects on water quality can be relied on and there is no need to duplicate these or establish alternative controls within the proposed precinct.
 - .

4.0 Submissions

Over Four-hundred submissions have been received in response to the PARLP.

I have reviewed the submissions, specifically those submissions that raise groundwater issues (there are at least 82 of these), as well as reviewing the submission summaries compiled by Auckland Council. The submissions have covered a series of general groundwater related themes, which are outlined below:

1. Water Quality Related Themes

(No.s: 7,8,9,13,21,39,45,54,56,409,74,76,82,107,108,121,126,132,143,144,146,148,150,152,157,159,187,188,190,192,199,232,235,395,396,401,407,20,23,29,66,67,72,122,130,149,169,182,230,231,345,346,347,349,351,369)

- a. Water quality risks from leachate (or other contaminant(s)) migration/release impacting the regional water supply aquifer (and many note the Watercare Ltd supply borehole(s), Hotoe River takes, plus other private takes, etc.)
- b. Water quality risks from leachate (or other contaminant) migration/release to surface water / Hotoe River / Kaipara Harbour - and associated ecological effects.

It is clear from the submissions that Water Quality related concerns are the key groundwater related issue, and there is validity for the concern. I suggest means for the PARLP to better address the extent of water quality degradation within Section 5.

2. Physical Hydrogeology Related Themes

(No.s: 8,21,28,34,39,56,74,76,82,108,126,128,141,150,157,159,188,199,356,395,12,20,29,66,92,104,119,141, 149,230,355)

- a. Fractured nature of the area's geology, and perceived high propensity for subsurface (groundwater) flow and migration of leachate (or other) contaminants.
- b. High rainfall and high rainfall intensities of the area, and lightning storms - and inference of the location being 'unsuitable' due to risks of surface flooding and/or underground migration of leachate (or other) contaminants.
- c. The noted presence of numerous 'springs', 'tomos', 'underground streams', (e.g. Springhill Farm') and the inference that the location is unsuitable due to the prevalence of these features (e.g. impacts this could have on the liner, and propensity for contaminant migration).
- d. Impacts on recharge to the underlying/surrounding aquifers and streams.

There is also a significant number of concerns relating to the physical hydrogeological suitability of the PARLP with respect to hosting landfilling. I agree that there are some valid concerns, particularly those related to potential impacts on recharge to underlying/surrounding aquifers. I suggest means for the PARLP to better address these concerns within Section 5.

3. Landfill Liner / Containment Related Failure & Degradation Themes (with consequent leachate release to groundwater) (No.s.: 76,108,126,138,150,157,188,395,15,95,100)

- a. Liner failure and/or large 'event' (e.g. landslide, fire, earthquake, etc) that could cause a substantial leachate release (or other release) of contaminants - with consequent damaging environmental and/or other effects.
- b. Degradation/failure of the landfill liner over long-term time periods, and concurrent release(s) of leachate (or other) contaminants - given that the contaminants could last for hundreds of years.

Whilst these submissions are primarily related to the Landfill Engineering Discipline, it is also pertinent to groundwater as groundwater is the immediate receiving environment for any potential leakage through the lining system. Similar to the Water Quality theme above, I have suggested means for the PARLP to better address the extent of water quality degradation within Section 5.

4. Regulatory Themes

(No.s:8,9,24,28,34,45,56,76,82,107,108,115,126,128,132,143,146,148,150,152,157,171,187,188,199,248,394,395, 111,348,29,44,66,67,100,130,136,191,408,411)

- a. The proposal conflicts with the purpose and principals of the RMA, and other policy e.g. (NPSFW)
- b. The proposal conflicts with the Auckland Unitary Plan (in several instances)
- c. Use of management plans to not sufficient to provide positive outcomes

Whilst these submissions are primarily related to the planning discipline, I have provided a summary here of submissions where both planning and water quality related issues were raised.

The submission themes listed are broadly in agreement with the Key Issues I have raised within Section 2 of this document e.g. no additional themes have been raised, but commonality on key issues is noted.

Submission No. 120, made by Watercare Services Limited (WSL), raises several deficiencies (in WSL's opinion) with the PARLP Objectives, Policies, Rules, and Standards, with respect to groundwater/aquifer protection (water quantity and quality). I have read through the WSL submission in detail, and note that WSL raise some common issues to those I have outlined in Section 2 of this document. I am in general agreement with the issues identified and relief sought by WSL (where relevant to or in addition to the Key Issues I have outlined in Section 2).

As the regions' water supply utility, WSL are a key stakeholder for the groundwater and surface water resources, but it should be noted that there are hundreds (or more) of other private groundwater and surface water users (or potential future users) whose interests benefit from the relief being sought by WSL and rectification of the issues I address in Section 2.

I make particular note of WSL's requested relief on PARLP Policy wording whereby '*offsetting and compensation*' of adverse effects to water quality and quantity is not considered (by WSL) to be appropriate – and instead should be avoided. I agree that avoidance is the most prudent course of action for both quality and quantity, but particularly quality, as mitigation and/or remedy can be very difficult or sometimes impossible (depending on the technical circumstances of the actual adverse effects). Reliance on the regional aquifer and Hotoe River (and it's tributaries) is a serious matter for this part of Auckland as alternative water supply sources are not readily available (and could require significant time and capital works to implement if required). It is critical that the PARLP acknowledges this and incorporates a framework commensurate with these risks.

I do note that water quantity, at least in theory, can be more readily (but often not without difficulty) offset or compensated e.g. through engineering enhanced aquifer recharge, artificially supporting baseflows, and others. I further add that water quality effects can be remedied and/or mitigated (but often not without difficulty) e.g. through in-situ or ex-situ interventions. I do not consider it appropriate in this instance to adopt offsetting or compensation in the matter of water quality effects, and consequently these should be avoided, remedied, or mitigated.

5.0 Assessment of groundwater related effects

1. Proposed Auckland Regional Landfill Precinct (PARLP) Objectives (I617.2) do not incorporate any objectives to safeguard against adverse effects to the underlying and regionally significant potable aquifer. Whilst PARLP Objective 4 provides a mandate for rivers, lakes, streams and wetlands - groundwater resources have not been incorporated. Given the regional importance of this groundwater resource for both municipal, agricultural, and commercial supply, it is my opinion that the PARLP should incorporate specific objective(s) regarding groundwater/aquifer water quality protection, as this is pertinent to the use of water resources in effectively all instances
2. The PARLP has not included specific provisions for water quality protection and specification of a physical zone (e.g. boundary, envelop) whereby water quality degradation must be contained within, over the entire life of the PARLP. Henceforth, I refer to this as a 'Water Quality Protection Framework'. In my opinion there is insufficient framework within the present PARLP provisions to ensure that activities provided by the PARLP are not able to degrade water quality outside of a specified three-dimensional zone (envelop); which should cease within the PARLP extents. Leachate seepage or other release of contaminant(s) (of some volume/mass/rate) to ground will occur over the entire life of the landfill (operation and/or aftercare). The contaminant release rate and total release amount to ground over the landfill's life (and aftercare) cannot be predicted with absolute certainty – but it will be greater than zero. There will therefore be physical locations whereby water quality (groundwater and/or surface water) is degraded. The applicant has stated a predicted leachate release rate and estimated contaminant concentrations at time of leakage, but has not provided a boundary by where all water quality effects will be managed, mitigated, or remediated within. In my opinion, a three-dimensional zone (envelop) which specifies the location/zone by which all water quality degradation effects will be confined to; would provide a measurable and transparent boundary to safeguard all other receptors/receiving environments that could be affected by water quality degradation. It is my opinion that this Water Quality Protection Framework should be established in a manner that is "fluid", enabling the water quality performance standards to evolve and be amended or updated; in keeping with the relevant water quality standards and contaminants of concern at the time i.e. not 'hard coded' to present day standards. The Water Quality Protection Framework would also need to be measurable and monitorable at (or inside) the defined spatial extents of the Water Quality Protection Zone – so it could be built into future conditions of consent. The PARLP needs to better address the aspects of water quality protection, particularly given that the PARLP, and risks to water quality, could outlast any landfill operational resource consents.
3. PARLP Restricted Discretionary rules for Existing Landfills (I617.8.1 and I617.8.2) presently only allow discretion on specific matters relating to air quality and landfill discharges. It is my opinion that Council should have discretion on additional matters, these are:
 1. Diversion of Water - The presence of a landfill structure alters the hydrological balance of the immediate area, but can also have flow-on impacts to other parts of the hydrological system outside of the immediate area (e.g. reduction in aquifer recharge and reduction in stream baseflows). The existing E7 rules do not adequately cover this situation, and in my opinion specific assessment and PARLP provisions are needed.
 2. Adequacy of the Site Management Plan – full discretion should be retained by the Council on all aspects of the Site Management Plan, rather than limited to the VIII topics outlined. Issues may arise which are not strictly within the realms of the VIII topics specified, and it is my opinion that discretion on such issues should not be precluded.
 3. Adequacy of the Aftercare Plan - full discretion should be retained by the Council on all aspects of the Aftercare Plan, rather than limited to the II topics outlined. Issues may arise which are not strictly within the realms of the II topics specified, and it is my opinion that discretion on such issues should not be precluded.

4. The underlying Auckland-wide rules for selected drilling activities (E7.4.1 A36, A37, A38, and A39) are Permitted Activities. It is my opinion that drilling of this nature, particularly within Sub-Precinct A, should be specified as a Controlled Activity. This is due to the potential risks of drilling through critical engineering elements which are designed to contain waste/leachate (e.g. landfill liner, sub-liner drainage, etc). Although this seems obvious for periods of operational landfilling, the Aftercare period also requires such provisions, and hence I recommend it is incorporated from the outset

I do not support the provisions of the PARLP Objective, Policies, Rules, and Standards as notified.
Reasoning:

- There is insufficient framework within the PARLP to ensure that adverse effects on water quality and quantity are avoided, remedied or mitigated (groundwater and surface water).
- There is insufficient framework within the underlying AUP Auckland-wide rules to ensure that adverse effects on groundwater quality and quantity are avoided (groundwater and surface water).
- A boundary of effects on water quality degradation (groundwater and surface water) has not been supplied by the applicant, despite the applicant stating that leachate release is predicted to occur. This needs to be comprehensively addressed by additional PARLP provisions.

6.0 Conclusions and recommendations

In conclusion:

1. The applicant has not adequately assessed the private plan change effects on the environment related to groundwater effects; namely groundwater quantity (including the hydrological impact of the physical landfill structures), and groundwater quality (including potential impacts and ongoing risks to the regionally significant and relied upon potable supply resources).
2. The private plan change does not give effect to the National Policy Statement for Freshwater Management 2020 namely parts 2, part 3, and the Compulsory Values in Appendix 1A – (1) Ecosystem Health, and Appendix 1B (2) Drinking Water.
3. The private plan change is not consistent with the direction and framework of the Auckland Unitary Plan (Operative in part), including giving effect to the Regional Policy Statement namely B3, B7, and B10.
4. The applicant has not provided a zone (e.g. boundary/envelope) whereby water quality degradation (groundwater and surface water) will be contained within. Without this information, it is not possible to comprehensively assess the extent, magnitude, and persistence of potential impacts to the regional water resources (namely; the Hotoe Waitemata Aquifer ('regional aquifer') and surface water resources) from the activities enabled by the PARLP.

However, I am able to support the private plan change subject to modifications, these are outlined below:

1. The requirement for the policies of the PARLP to more strongly state that adverse effects on groundwater quantity will be avoided, remedied, mitigated, offset, or compensated. Suggested wording alterations to Policies I617.3:

(X3) Adverse effects arising from the interception/diversion of recharge to the Waitemata Regional aquifer and adverse effects on the quality and quantity of water in the Waitemata Regional aquifer arising from the development and continued operation of the Auckland Regional Landfill are avoided. Any area within the PARLP where it is not practicable to achieve this must be identified through a three-dimensional physical area (e.g. a boundary or an 'envelope') within the precinct. Any water quality degradation must be contained within this area over the entire life of the landfill (including aftercare).

2. The PARLP incorporates a Water Quality Protection Framework whereby water quality degradation must be spatially contained within a specified Water Quality Protection Zone, over the entire life of the PARLP. Suggested wording addition to I617.6(1) Restricted Discretionary Standards, and I617.6(2) Discretionary Standards is:

(X1) A three-dimensional physical area (e.g. a boundary or an 'envelope') as required by Policy I617.3 (X3) and Special information requirement I617.9.1 (1) shall be identified and implemented.

3. Adequacy of the Site Management Plan – Suggested wording addition to “I617.8.2 Assessment criteria - Discharges to land and water from legally established landfills”

1 (e) the adequacy of the site management plan including:

- I. operation of the site;
- II. placement and compaction of waste material;
- III. daily operating procedures;
- IV. waste acceptance controls and monitoring;

- V. *response to natural hazards and unexpected discharges;*
- VI. *Vermin and bird management;*
- VII. *load inspection records; and*
- VIII. *monitoring, testing and sampling documentation*
- IX. *Any other aspect(s) pertinent to the sound management of the site and/or associated risks, in relation to relevant regional or national standards/guidance at the time of applying this Precinct Standard.*

4. Adequacy of the Aftercare Plan -suggested wording addition to “I617.8.2 Assessment criteria - Discharges to land and water from legally established landfills”.

1(f)the adequacy of the site aftercare plan including:

- I. *aftercare activities to address the risk posed by the contaminants to the environment; and*
- II. *timing and standard to aftercare activities*
- III. *Any other aspect(s) pertinent site aftercare and/or associated risks, in relation to relevant regional or national standards/guidance at the time of applying this Precinct Standard.*

5. Amending the specific underlying Auckland-wide rules for drilling activities (E7.4.1 A36, A37, A38, and A39) to be Controlled Activities within the PARLP. Suggested additions to “I617.7 Assessment – controlled activities”:

Council approval required for Drilling and Use of holes and bores anywhere within Sub-precinct A and within 500 m of Sub-precinct A, matters for control:

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- 1. *Borehole location - to avoid drilling through the liner system whenever possible, or otherwise minimising contaminant release risks*
- 2. *Borehole design – to avoid drilling through the liner system whenever possible, or at least ensuring the borehole design will not create potential pathways for contaminant escape (now or in future)*
- 3. *Drilling/installation methodology - to avoid drilling through the liner system whenever possible, or at least ensuring the drilling method will not create potential pathways for contaminant escape (now or in future)*

6. Amending the Special information requirements as below:

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9.1 New Landfills

- (1) Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS:

- Groundwater Monitoring and Contingency Plan
To include the identification of a three-dimensional physical area (e.g. a boundary or an ‘envelope’) within the precinct and demonstrating that water quality degradation can be contained within the identified envelope. Degradation will be measured against water quality standards and/or

guidelines that are in effect at the time for the protection of human health and environmental receptors. Standards and / or guidelines shall be selected in accordance with Ministry of Health and / or Ministry for the Environment guidance on the selection and application of guideline values in New Zealand e.g. ANZECC 2000, ANZG 2018, Drinking Water Standards for New Zealand (2005 revised 2018), etc. and updates/replacements/supersedes).

Memo (technical specialist report to contribute towards Council's section 42A hearing report)

03 September 2020

To: Ryan Bradley, Principal Planner, Auckland Council
From: Fiona Harte – Senior Specialist (Specialist Unit, Resource Consents), Auckland Council

Subject: Private Plan Change – Auckland Regional Landfill – Regional Land Disturbance Assessment

1.0 Introduction

1.1 I have undertaken a review of the proposed private plan change lodged by Waste Management NZ, on behalf of Auckland Council in relation to potential sediment discharge effects resulting from regional land disturbance associated with the proposed regional landfill.

1.2 Documents considered

In writing this memo, I have reviewed the following documents:

'Auckland Regional Landfill Plan Change Request Assessment of Effects and Section 32 Analysis', prepared by Tonkin & Taylor Ltd, dated February 2020.

'Auckland Regional Landfill Sediment and Erosion Control Report', prepared by Tonkin & Taylor Ltd, dated May 2019.

'Auckland Regional Landfill Engineering Report', prepared by Tonkin & Taylor Ltd, dated May 2019.

'Auckland Regional Landfill Assessment of Aquatic and Terrestrial Ecological Values and Effects', prepared by Tonkin & Taylor Ltd, dated May 2019.

'Auckland Regional Landfill Water Quality Baseline monitoring report', prepared by Tonkin & Taylor Ltd, dated May 2019.

'Stormwater and Industrial and Trade Activity', report prepared by Tonkin & Taylor Ltd, dated May 2019.

2.0 Key sediment discharge Issues

2.1 In summary, the proposed assessment criteria and matters of discretion are limited and general in nature regarding the potential effects that are that required to be assessed as part of any future resource consent application within the proposed precinct. The proposed assessment criteria and matters of discretion are reduced within scope when compared to the current provisions of E11. This could result in difficulty defining the scope of effects regarding land disturbance (sediment discharges) that should be assessed as part of any future resource consent application and potential difficulty imposing conditions in accordance with section 108AA of the Resource Management Act (1991).

2.2 There are no significant issues with the proposed activity table, and any activity not within the proposed precinct is covered by the underlying zoning and Auckland-wide provisions of the Auckland Unitary Plan: Operative in Part (AUP:OP).

3.0 Applicant's assessment

- 3.1 The purpose of the proposed precinct is to recognise the site as the location for the proposed regional landfill. The plan change proposes a new precinct and sub precincts with a complete set of objectives and policies, activity table, matters of discretion and assessment criteria that would supersede and in some cases be read in conjunction with the current provisions of chapter E11 of the Auckland Unitary Plan: Operative in Part (AUP:OP), for regional land disturbance. The activity table for the proposed precinct includes the construction, operation and maintenance activities associated with discharges from new and existing landfills.
- 3.2 The applicant has provided the same application material as that provided for the separate resource consent application (BUN60339589) for a proposed landfill applied for under the current provisions of the Auckland Unitary Plan (Operative in Part). This includes a proposed earthworks methodology including details such as USLEs (Universal Soil Loss Equations) and proposed erosion and sediment controls to address the potential effects from sediment discharges to the receiving environment. The applicant has also proposed to undertake an adaptive management approach. Although this demonstrates how potential sediment discharges from a landfill within the subject site would be managed, this level of detail is not considered necessary to assess the proposed plan change.
- 3.3 The proposed precinct rules centre on discharges from new and existing landfills inside of and outside of Sub-Precinct A.
- 3.4 Proposed objectives (I617.2) and policies (I617.3) have been provided and are proposed to be in addition to the overlay, Auckland-wide and zone objectives, and policies. The applicant has also proposed through wording in the precinct that where there is a conflict, the provisions of the precinct plan would take precedence.
- 3.5 The applicant has proposed general restricted discretionary (RD) and discretionary (D) standards, and assessment criteria is proposed under I617.8.1 for restricted discretionary activities and specific criteria is listed under I617.8.2 for discharges to land and water from legally established landfills. These would replace the current assessment criteria within chapter E11 of the Auckland Unitary plan when assessing the sediment discharge component of earthworks.

4.0 Submissions

- 4.1 Submissions 8, 15, 34, 66, 76, 130, 136, 138, 144, 150, 157, 188, 199, 394 and 395 make specific reference to concerns regarding sedimentation effects to waterways and in some cases particular concern regarding the adverse effects from sedimentation to the Hoteo River and the Kaipara Harbour. In addition to these submissions, many additional submissions state general concern surrounding proximity to adjacent waterways (which discharge to the Hoteo River and ultimately the Kaipara Harbour), high rainfall, environmental impact, risk and pollution. Although not specified within these submissions, these comments could also be underpinned by a concern relating to sediment discharges.
- 4.2 Earthworks for filling activities (cleanfills, managed fills and landfills) utilise sites with large gullies which generally contain steep slopes and watercourses, inherent to the natural topography. As such, any site proposed to situate a landfill will likely contain adjacent watercourses which are sensitive to sediment discharges. Although I do acknowledge that an alternative site could be obtained to contain waterbodies with lower ecological values and located outside of the Hoteo and Kaipara Harbour catchment (which is preferable), I do not believe the site can be deemed unsuitable for earthworks activities at this stage. Determining whether the effects relating to sediment discharges will be significantly adverse or not, can only be determined when assessing proposed management and mitigation of effects for each specific proposal.
- 4.3 Management of earthworks activities is a key consideration in determining whether significant adverse effects would be generated from a proposed earthworks activity in regard to the receiving environment specific to the proposal. There are best practice industry measures for earthworks where the implementation of erosion and sediment controls in addition to appropriate site management and monitoring techniques are employed to significantly minimise

sediment discharges to the receiving environment. Staging and limiting exposed area is also a key consideration of any earthworks proposal. For the Auckland region, best practice erosion and sediment control refers to Auckland Council's Guidance document GD05. These measures and management techniques are a key part of assessing a resource consent application for earthworks including sediment discharges.

- 4.4 Concern regarding adverse effects pertaining to sediment discharges to adjacent watercourses and the ultimate receiving coastal marine area, being the Kaipara Harbour in this particular case is valid; however, I believe this is best addressed as a resource consent matter as opposed to consideration during a plan change. Any application for resource consent must detail the potential adverse effects from proposed sediment discharges and detail to what extent they will be avoided, remedied, or mitigated through the design of specific onsite management techniques and controls which would be developed as part of a resource consent application. Only then can a determination be made on whether the potential adverse effects associated with sediment discharges will be more than minor significant in a particular proposal.

5.0 Assessment of sediment discharge effects

Objectives and Policies

- 5.1 Additional objectives and policies to that included within E11 are proposed by the applicant. The applicant has specified in the precinct text that in the case of any conflict between the existing objectives and policies of E11 and that of the proposed precinct, the precinct provisions would take precedence.

Objectives

- 5.2 Objectives 3-6 and policies 2-6 are most relevant to sediment discharge. I believe objective 4 and policies 5&6 are of concern.
- 5.3 Proposed objective four could mean that effects relating to land disturbance including sediment discharges, may not be avoided, remedied, mitigated and instead to the extent reasonably practicable, be offset or compensated. The phrase *"to the extent reasonably practicable"* is ambiguous and could result in difficulty assessing whether the quantum of offset or compensation is appropriate. I recommend that this objective be removed as the current provisions of the RMA and AUP:OP provide for assessment of the effects management hierarchy. I also note that the National Policy Statement for Freshwater Management (NPS:FM), effective 03 September 2020, defines the term 'effects management hierarchy'. Objective four is not consistent with this definition:

"effects management hierarchy, in relation to natural inland wetlands and rivers, means an approach to managing the adverse effects of an activity on the extent or values of a wetland or river (including cumulative effects and loss of potential value) that requires that:

- (a) adverse effects are avoided where practicable; and*
- (b) where adverse effects cannot be avoided, they are minimised where practicable; and*
- (c) where adverse effects cannot be minimised, they are remedied where practicable; and*
- (d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, aquatic offsetting is provided where possible; and*
- (e) if aquatic offsetting of more than minor residual adverse effects is not possible, aquatic compensation is provided; and*
- (f) if aquatic compensation is not appropriate, the activity itself is avoided".*

Policies

- 5.4 I find policy five to be ambiguous where it is unclear what the term "generally and to the extent practicable" means when referring to avoiding, remedying, and mitigating adverse effects. For example, if adverse effects associated with a sediment discharge were 'generally' mitigated this

would insinuate that the adverse effects have not been sufficiently mitigated and there could be significant residual adverse effects that are not being managed.

- 5.5 Policy six provides for significant residual adverse effects. This is not best practice and in my view this should not be encouraged. If a proposal were to have significant residual adverse effects, it would require careful consideration and assessment upfront to make an informed determination on whether the proposal is appropriate to be approved. Providing for significant adverse effects within the precinct prior to an assessment of the merits of a resource consent application dilutes the importance of the values that are impacted or lost and pre-empts a decision regarding those effects.
- 5.6 Policy six also allows offsetting or compensation actions to be staged over the long term. This means that offsetting and compensation actions may not be undertaken until many years following the adverse effect. This could result in a time lag between the adverse effect and the offsetting and/or compensation occurring which as a result, can increase the severity of effects. Time lags are not encouraged in principle and offsetting and/or compensation actions should ideally be undertaken upfront or if not as soon as possible after to the adverse effect occurring. It is also noted that chapter E11 does not currently contain provision for offsetting or compensation as adverse effects associated with sediment discharges can generally be mitigated through the implementation of best practice erosion and sediment control and onsite management techniques.

Activity Table

- 5.7 The proposed rules centre on discharges and there are no rules proposed regarding area limits for when a consent would be required for earthworks. This differs from the current provisions of E11/E26, where E11 contains rules regarding the area, slope and proximity of the earthworks to a sediment control protection area. In addition to this, E11.4.2 contains separate rules for the temporary diversion and damming of surface water and discharge of treated sediment laden water from land disturbance, as permitted activities when allowed by a resource consent within E11 or when complying with all the relevant permitted activity standards. The proposed precinct separates the discharge component within E11 and creates a separate activity status for this, either discretionary or non-complying and this is more restrictive than table E11.4.2 for discharges. In summary, earthworks required for a proposed landfill will still be assessed under the chapter E11 Land disturbance – Regional, in addition to the proposed discharge rules of the precinct which are more restrictive.
- 5.8 Under the current provisions within chapter E11, there are only two activities (relating to cultivation) that trigger a discretionary activity status and there are no non-complying activities. Regional land disturbance under chapter E26 has the most restrictive activity status as RD (outside of the overlays) or D within the overlays. Therefore, discharges falling under a discretionary, restricted discretionary or non-complying activity status as proposed by the plan change, is no less permissive than the current provisions allow, and this is supported.
- 5.9 Proposed activity table 1617.4.1 proposes that discharges to land and water from landfills outside of Sub-Precinct A (landfill footprint) would be a non-complying activity as opposed to a discretionary activity when located within Sub-Precinct A. This includes both areas inside and outside of the overlays. It is unclear why a more restrictive activity status for discharges outside of the overlays is proposed as the potential level of effects from landfill discharges can be managed to mitigate adverse effects. In comparison, the applicant proposes that stream and wetland reclamation be a discretionary activity, where these effects cannot be mitigated and will result in permanent loss of aquatic habitat. I consider that the rules could have been separated further so that discharges from landfills within the overlays are non-complying, and outside the overlays and outside of Sub-Precinct A could also have been discretionary which would still be more restrictive than the current provisions of E11/E26.
- 5.10 In regard to ongoing earthworks activities and associated discharges that occur ancillary to the landfill (such as the clay borrow area and stockpile areas) that are located outside of Sub-Precinct A, these discharges are not considered to be from landfills and would be assessed fully under E11 for regional land disturbance.

Matters of Discretion

5.11 The applicant has proposed matters of discretion in I6178.1(2) for other discharges from all restricted discretionary activities. While some of the existing matters of discretion in E11 could be captured under the proposed matters of discretion, the matters are too general and do not contain specific reference to the specific techniques and considerations to minimise and manage sediment discharge from land disturbance. These include:

- Compliance with the standards, in particular that all earthworks meet the general standard E11.6.2(2) requiring best practice erosion and sediment control measures be implemented for the duration of land disturbance (best practice currently considered as Auckland Council Guidance Document (GD05) *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region*). Instead the matters of discretion refer to the best practicable option for reducing adverse effects. The best practicable option may not be the same as best practice due to the ambiguity of the term 'practicable'. This means best practice may not be proposed or implemented if it can be demonstrated as impracticable.
- When considering whether a proposal is consistent with best practice, the following matters (but not limited to) are considered:
 - Design and suitability of erosion and sediment controls;
 - staging of works and progressive stabilisation;
 - timing and duration of works;
 - term of consent;
 - treatment of stockpiled materials; and
 - information and monitoring requirements.

All these matters are contained within E11.8.1 Matters of discretion and are excluded from the proposed matters of discretion in the precinct. As noted above, the focus is on best practicable options for reducing adverse effects which are not necessarily best practice. The term best practicable option as opposed to best practice may limit the discretion of Council to require best practice controls and techniques to be used regarding erosion and sediment controls, and as a result, potentially result in a greater level of sediment discharges to the receiving environment from future landfill activities where a lower but more practicable standard is implemented.

- The proposed matters of discretion seem to be focused on 'onsite' considerations i.e. quantity and quality of discharge, methods for treatment, best practicable options to reduce adverse effects, location of discharge points, rate and frequency of discharge, monitoring requirements. There are no proposed matters regarding the adverse effects on sediment discharges to water bodies, particularly sensitive receiving environments, potential effects on significant ecological and indigenous biodiversity that are otherwise included in E11.8.1 Matters of discretion. This may also limit the discretion over which Council can request assessment and impose conditions regarding effects on and monitoring of the receiving environment. This coupled with the term 'best practicable option' could mean that there could be adverse environmental effects relating to sediment discharges as a result of any future proposals that could otherwise be avoided, remedied or mitigated to a greater extent under the current provisions.
- E11.8.1 currently provides for discretion over the proportion of the catchment which is exposed. This is not included within the proposed matters and is a key consideration to any earthworks proposal, as the amount of earth exposed, directly correlates to the amount of erosion and subsequent sediment discharges.

- There is no specific reference to land disturbance within a Significant Ecological Area (SEA). As noted in section three above, activities within the specified overlays not complying with activity standard 1617.6(1)(5), will be assessed as a non-complying activity. Therefore, the matters of discretion for RD activities don't necessarily need to cover SEAs specifically regarding land disturbance as Council has full discretion for assessment of a non-complying activity.

5.12 In summary of the above points, the proposed provisions miss key matters that are included in the current provisions of E11. As such, Council's assessment of future resource consent applications should the plan change be approved, could result in the inability to question certain aspects of the earthworks and proposed sediment discharges, difficulty to impose conditions regarding best practice and could result in a 'lesser' environmental outcome when compared to the current provisions. As such, it is recommended that the current matters of discretion in E11 are adopted for sediment discharges.

Assessment Criteria

- 5.13 The assessment criteria lack any reference to earthworks within a SEA. In terms of sediment discharges this could be generally covered by 1617.8(a), (b) & (c), but does not cover the disturbance aspect from regional land disturbance and the specific nature of SEAs. The assessment criteria in E11.8.2(2) covers these aspects, including whether the land disturbance proposed is undertaken so it has no adverse effect or minor adverse effect on aquatic and terrestrial ecology and where relevant; nesting, feeding and breeding of species, biological processes, connections between eco-systems, diversity of species, habitat of threatened or protected species, rare habitat, threatened or at risk habitat, buffering of indigenous systems, cumulative effects. Although, any land disturbance works within a SEA would be assessed as non-complying (as opposed to RD under the current provisions of E11 or potentially a permitted activity under E26).
- 5.14 1617.8.2(1d) for discharges to land and water from legally established landfills states "*whether it is practicable to reduce existing adverse effects including site and operational constraints*". The term 'practicable' is concerning due to how this term could be interpreted and what it might mean for environmental outcomes and the ability for Council to impose future conditions of consent. As noted above, this is similar to the use of 'best practical option' and may result in different methodologies and techniques, and potentially more severe adverse effects.
- 5.15 Key elements from the current provisions of E11.8.2 such as; the proximity of earthworks to any water body and the extent to which erosion and sediment controls and the construction methodology will adequately avoid or minimise adverse effects; proximity to areas of significant ecological value; monitoring the volume and concentration of sediment discharged; and duration, season or staging of the works, are missing from the proposed assessment criteria. These are still considered relevant to the proposed precinct plan as they are key considerations of any earthworks proposal and methodology and the precinct activities proposed to discharge sediment to a sensitive receiving environment. As such, it is recommended that the current provisions of Chapter E11 for assessment criteria are adopted, as they are for Chapter E26.5 of the AUP:OP for Infrastructure.
- 5.16 An adaptive management approach has been proposed by the applicant on the current resource consent application and noted within the application material for the proposed plan change. The Auckland Unitary Plan defines Adaptive Management in chapter J as "*a systematic, iterative process of decision making in the face of uncertainty, with an aim of reducing uncertainty over time through system monitoring and changes to management in response to the results of monitoring*".
- 5.17 An adaptive management approach is supported in principle as it would assist in monitoring and regulating adverse effects on the receiving environment especially where there is uncertainty around cumulative effects, and managing open area within the precinct when considering the scale, long duration of works and the sensitivity of the receiving environment. However, there is no mention of adaptive management within the proposed precinct plan.

- 5.18 I recommend that adaptive management be included in the assessment criteria for discharges to land and water for legally established landfills (I617.8.2) and within the proposed policies (I617.3). This will ensure that should the plan change be approved, all future applicants are aware that all earthworks and associated discharges need to be implemented under an adaptive management approach and that Council has consideration of this under the relevant assessment criteria for RD activities and under the policy for D and NC activities.

6.0 Conclusions and recommendations

- 6.1 I generally support the proposed activity statuses regarding how they would be applied to the discharge component of regional land disturbance activities where they are more restrictive than the current provisions.
- 6.2 The objectives and policies of E11 still apply in addition to the proposed precinct provisions and I support this approach. The objectives and policies of the proposed precinct are not contrary to the E11 provisions; however, they do contain ambiguous terms and the issue of time lag regarding offsetting and compensation is inappropriate. As such, I recommend objective four, policy five and policy six be removed.
- 6.3 Overall, the proposed assessment criteria and matters of discretion have been simplified, generalised and do not incorporate key components of a regional land disturbance assessment. When considering the scale of work proposed, the duration of landfill activities, the sensitivity of the receiving environment including the Hoteo River, Kaipara Harbour and onsite SEAs, Wetland Management Areas and Natural Stream Management Areas, the proposed assessment criteria and matters of discretion are lacking and are too general when compared to the current provisions of E11. This could result in difficulty determining the effects to be assessed regarding sediment discharge and the extent of mitigation, the type of information required on future resource consent applications and the ability to impose consent conditions. Detail from the current provisions in chapter E11 of the AUP:OP is absent and could prevent such matters from being assessed in any future resource consent application should the plan change be approved. As such, it is recommended that the current assessment criteria and matters of discretion within E11 are adopted.
- 6.4 I support an adaptive management approach; however, there is no mention of such an approach within the proposed precinct plan. Considering the high ecological value and sensitivity of the receiving environment and the benefits of using an adaptive management regime to avoid or manage potential adverse effects to these environments, I believe adaptive management should be included as a policy and within the assessment criteria for RD activities. I suggest the following additional policy and assessment criteria:

I617.3 Policies [rp/dp]

Manage discharges to land and water through an adaptive management regime that includes system monitoring and changes to management in response to monitoring results.

I617.8.2 Assessment Criteria

Discharges to land and water from legally established landfills

The extent to which an adaptive management regime will address the cumulative nature and severity of effects when considering the effectiveness of onsite management and monitoring techniques, monitoring of the receiving environment and onsite devices, implementation of adaptations, and reporting.

- 6.5 In summary, I can support the proposed plan change from a regional land disturbance/sediment discharge perspective if modifications are undertaken as identified

in the points above. If modifications are not made, I believe the provisions are diluted and ambiguous when compared to the current provisions of E11 and E26 of the AUP:OP. This could result in a reduced scope of assessment and restrict potential consent conditions where this could constrain environmental outcomes.

Memo prepared by:

Fiona Harte
BSc PGDipSci




**Senior Specialist – Earth and Stream works
Specialist Unit, Resource Consents**

Date:

03 September 2020

Technical memo reviewed and approved for release by:

David Hampson



**Team Leader - Earth, Streams & Trees
Specialist Unit, Resource Consents**

Date:

4 September 2020

14 September 2020

To: Ryan Bradley, Principal Planner, Plans and Places

From: Iresh Jayawardena, Senior Healthy Waters Specialist, Healthy waters

CC: Ken Tomkins, Senior Healthy Waters Specialist, Healthy Waters
Sarah Nolan, Healthy Waters Specialist, Healthy Waters
Melody Mendez, Healthy Waters Specialist, Healthy Waters
Clarke McKinney, Resource Management Team Manager, Healthy Waters

Subject: Private Plan Change 42 – Auckland Regional Landfill – Stormwater Assessment

1. Introduction

This memo below is based on the information submitted as part of the private plan change 42 and provides an analysis of submissions received that relate to stormwater, water quality, flooding, sedimentation and erosion effects. Following the analysis of submissions, this memo also undertakes an evaluation of those parts of the applicant's section 32 report on the private plan change that relate to stormwater pursuant to section 32(2)(a).

This memo has been prepared by Dr Jayawardena and draws on information provided by a number of technical experts within Healthy Waters.

Name of the specialist	Qualifications/ experience in the field
Dr. Iresh Jayawardena	Senior Healthy Waters Specialist in the Resource Management Team in Healthy Waters Department. I hold a PhD in Planning, and am an Associate Member of New Zealand Planning Institute (NZPI). I have over 12 years of planning experience spanning both applied and academic contexts, the majority of which has been in the water sector.
Mr. Ken Tomkins	Senior Healthy Waters Specialist in the Catchment Planning Team in Healthy Waters Department. I hold a Bachelor of Engineering (Civil), am a Chartered Member of Engineering NZ and have over 30 years of experience in stormwater design and Catchment Planning
Ms. Sarah Nolan	Healthy Waters Specialist in the Waterways Planning Team in Healthy Waters Department, and I have a Bachelor of Applied Science. I project manage a 5 year, \$2 million project look at mitigations for streambank erosion (aside form riparian planting and fencing stock) and have a background in geomorphology.
Ms. Melody Mendez	Healthy Waters Specialist in the Resource Management Team in Healthy Waters Department. I hold a Masters in Environmental Management. I have been the single point of contact for our

	mana whenua partners in Healthy Waters for the last three years. I facilitate and manage relationships with mana whenua across a 100+ strong CAPEX infrastructure programme.
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In writing this memo, we have reviewed the following documents:

- Auckland Regional Landfill Private Plan Change Request, Assessment of Effects and section 32 Analysis, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated February 2020
- Appendix A – Proposed Plan Change, Auckland Regional Landfill Precinct (I617)
- Stormwater and Industrial and Trade Activity, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated May 2029
- Engineering Report, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated May 2029
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change, prepared by Tonkin + Taylor, dated 3 February 2020

Mr. Tomkins and Mr. Jayawardena undertook site visit on 11th of August 2020.

2. Key issues related to stormwater management, streams and related planning provisions

The following evaluation summarises the findings from Healthy Waters Review of the PC42 Auckland regional Landfill. I note the review focuses on the location, stormwater management, sedimentation and water quality, and flooding effects assesment of the plan change proposal undertaken by the applicant’s consultants. The memo also provides comments on the proposed relevant precinct provisions and other technical information relating to assesment of effects.

The plan change seeks to introduce a new Precinct named Auckland Regional Landfill (I617) to the existing Auckland Unitary Plan (Operative in Part). The purpose of the proposed precinct is to enable the efficient construction and long-term operation of landfill activities within the proposed site. The landfill operation will be served by stormwater management infrastructure owned and operated by the applicant generally comprising water quality treatment/detention ponds serving each phase of the landfill process. No stormwater management infrastructure is proposed to be vested to the Auckland Council.

The site is owned by Waste Management New Zealand Limited (the applicant) and is located at 1232 State Highway 1, Wayby Valley. Details of the site, including legal descriptions are included in Table 1.3 of the private plan change request report of the applicant.

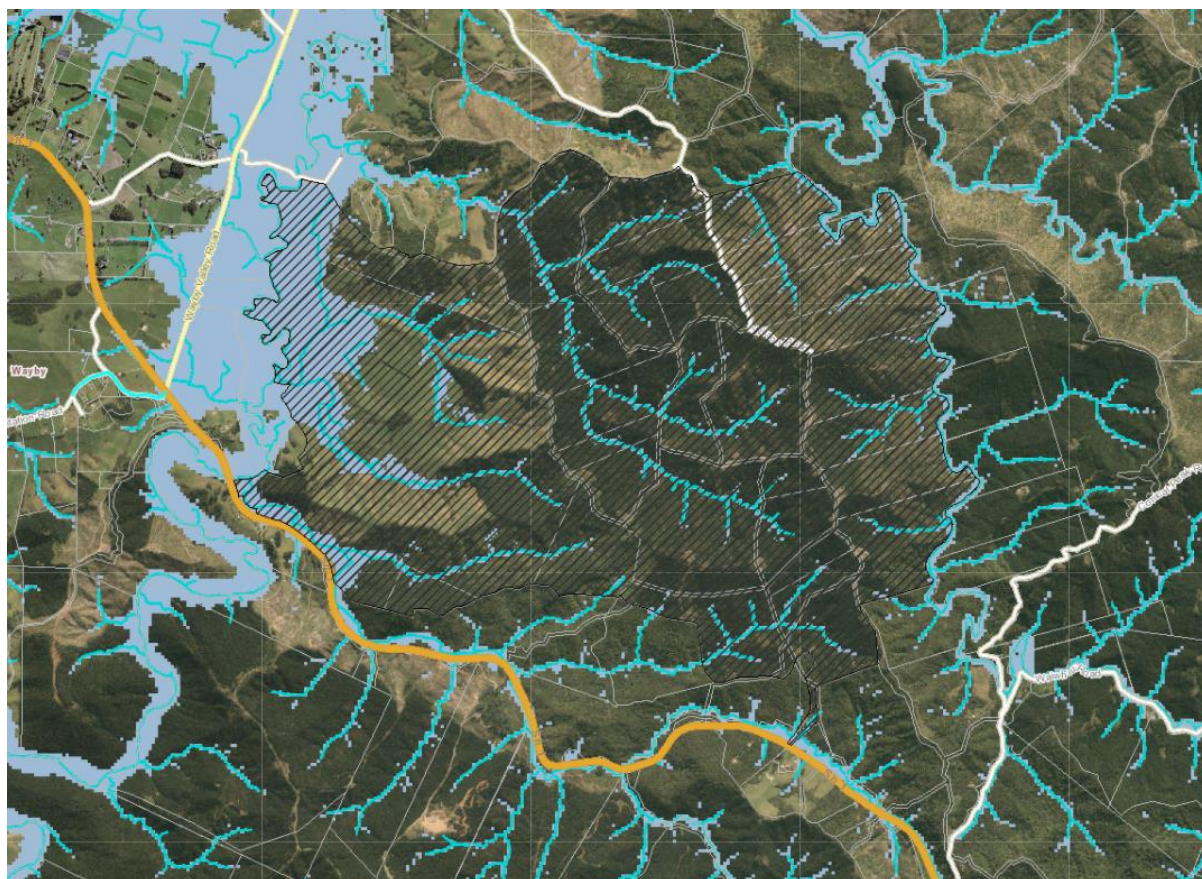


Figure 1: Subject site (hatching) and surrounding environment with natural water features

WMNZ owned Land comprises approx. 1020 ha (Whole Precinct) and the landfill footprint for waste placement will occupy approx. 60 ha in the precinct area. The site is zoned Rural – Rural Production under AUP OP.

2.1 Site selection process and criteria

The s32 report states that the initial preparation of the project was started in 2007. An extensive site selection process and study was undertaken to refine best options. As discussed earlier, the proposal is to create a new precinct to support the development and ongoing operation of the Auckland Regional Landfill. The assessment of effects and s32 report provides a summary of the site selection process for the landfill (Appendix D). The report also highlights that “key selection criteria” were used to form the basis for the initial site identification process.

Section 3.1 in Appendix D provides background and outlines the key site selection criteria (drivers) and provides a summary of “a ranked constraints hierarchy” with individual weightings when individual constraints are applied for the consideration of alternative sites. This constraint hierarchy was ranked into three levels, namely (1) Primary constraints, (2) Secondary constraints, and (3) Tertiary constraints.

The s32 report states, ‘access’ was considered as the primary constraint for site identification, and consideration was given to identifying a potential site to be located within

an acceptable distance from State Highway routes north and north-west of Auckland. The report further states, reasons for this constraint are that the landfill operation often generates a high number of heavy truck movements which creates challenges for future resource consent processes. The s32 report states that the approach to site selection process used for the project is consistent with the WasteMINZ Technical Guidelines for Disposal to Land (2018). As a result, numerous sites were looked into for consideration. Approximately more than 28 sites were considered and were then narrowed down to nine potential sites.

Comments:

Although the site selection process seems to have been completed using an extensive process and in accordance with an approach recommended in WasteNZ Technical Guidelines (2018), the review of the private plan change request does not provide sufficient information or details for Council to better understand the nature of the site selection process used and the rationale behind key decision making under each stage throughout the process. There is insufficient information available to understand any other sites that have been considered during any stage of the process, and to confirm the unsuitability of other sites for the proposed landfill activity as compared to the chosen site. Page 7 of the s32 report states;

'The process followed, and key selection criteria used are outlined in Appendix D. This application does not identify the other sites considered. This is due to commercial sensitivity and the potential impact on current landowners of the other sites, as the vast majority would be unaware that their land was being considered, potentially causing significant uncertainty for them if this information was made public.'

It is considered that the submitted plan change proposal does not provide any of the following details for undertaking a full review of the proposal;

- An assessment or a comparison of preferred sites identified
- What alternative other site options were assessed after applying the selection criteria
- a confirmation on what basis the other sites were removed from the site selection process

The s32 report's section on site selection notes 'a limited number of landowners' as a determining factor. However, I consider this to be not an environmental effect, and rather more appropriately regarded as a feasibility and options assessment. The absence of this information relating to site selection and the plan preparation process means there are gaps in understanding the appropriateness of the chosen site, its location, and its suitability for the proposed landfill operation. Furthermore, the absence of information does not mean that the selected site represents lesser environmental constraints or values as compared to other site options that were considered as less suitable to enable landfill operation as proposed by the plan change.

Given the site is located close proximity to Significant Ecological Areas identified in the AUP OP, further information is required to understand how Wayby Valley ranked against other locations for ecological values, and to understand how the site selection process and criteria give effect to:

- The purpose of and principles of in Part 2 of the RMA 1991
- National Policy Statement for Freshwater Management 2020
- Relevant provisions of Chapter B of the AUP OP (Regional Policy Statement) in particular, B7 Natural Resources and B10 Environmental risk
- Relevant provisions of the AUP OP Chapter E, in particular Chapter E1 Water quality and integrated management

To assess the suitability of the location for a potential future municipal landfill, it would be useful if the applicant could provide additional information on the site selection process and a full options assessment in its evidence for the hearing.

2.2 Selected site - Wayby Valley

Page 8 of the s32 report states that Wayby Valley was identified as the preferred site for the landfill development following the extensive site selection process and concludes:

'The Wayby Valley site was identified as the preferred site for the landfill development following this extensive site selection process. The Wayby site scored highly in the assessment due to:

- *its proximity to central Auckland*
- *its proximity to the state highway to enable suitable access without disruption to communities on minor roads;*
- *availability of buffer to sensitive receptors;*
- *large enough to provide a regional facility for Auckland;*
- *absence of sites of identified cultural significance, SEAs and other identified features in the AUP (or PAUP as it was then);*
- *appropriate underlying geology with conditions which could be addressed through additional engineering; and*
- *limited number of landowners.*

In summary, the land within the proposed precinct was considered to be the most appropriate for landfill development subject to design and construction methods.

A summary of the key observations from the site assessment and ranking process includes the following:

- Availability of good buffer. Marginal buffer availability has been dropped in the ranking
- Information on the land ownership, complexity of the number of landowners and legal mechanisms
- Issues identified under the proposed version of AUP OP categorised key concerns into primary and secondary. The landfill project was initiated in 2014 and during that phase of the project AUP OP was going through the planning process so new planning provisions were introduced.
- None of the selected sites were unsuitable from a hydrogeological/geological elements point of view but would require high level engineering complexities at design and development stage. However, Dome Valley was identified as able to cope

with these issues through additional engineering controls rather than having any ‘fatal flaws’ which would otherwise identify the site as unsuitable for development.

Comments:

In the selection criteria provided in Appendix D, it is considered that the proposed site selection process took into account significant natural and geographical constraints to determine the best potential sites for the establishment of proposed land fill activity. This includes surrounding ecological significance, terrain and geology, sites significant to iwi etc.

However, given the nature, activity, and scale of the potential landfill under the private plan change, the site selection process also requires a final refinement by employing a process similar to a ‘site validation’ to determine whether the selected site satisfies the key drivers as stated in the assessment as well as to understand crucial other factors that may render the site unsuitable for the proposed land use. For example, factors such as permanent / intermittent watercourses with high ecological values and within tributaries of the Hōteio River. The Hōteio is also significant cultural taonga for mana whenua and subject to a Statutory Acknowledgement under the Ngāti Manuhiri Claims Settlement Act 2012. The Hōteio River ultimately flows towards the Kaipara Harbour receiving environment situated approximately 30km downstream from the proposed precinct.

The Kaipara Harbour is considered New Zealand’s largest estuarine ecosystem and is the receiving environment of a massive 640,000ha catchment extending across the Auckland and Northland Regions. There are ongoing issues of environmental degradation to the health of Kaipara marine and estuarine environment; restoring and protecting the mauri of the Kaipara is of utmost importance^{1 2}. The government announced mid-2020 a \$100 million boost for the restoration of the Kaipara Harbour, with the goal to reduce 50% of sediment entering the waterways (and ultimately, Harbour) over the following six years.

Page 4, Appendix D states,

In areas that have such technical constraints, as recommended by Guidelines, the design would need to incorporate a higher level of engineered containment and appropriate contingency measures than would be required at a site with low permeability underlying geology (natural containment). This was taken into account in the ranking of the sites.

The applicant assesses the site as suitable for a landfill and proposes to manage future effects of activities within the precinct with bespoke objectives, policies and rules. However, given the existing natural characteristics, freshwater values and the site being located in the upper catchment of Wayby Valley watershed with Kaipara Harbour as the receiving environment, the site validation exercise/process should be considered a high priority. However, a site validation process is not provided with the plan change proposal, meaning that insufficient information has been provided to adequately assess the suitability of the selected site for the proposed landfill activity.

Having reviewed the elements considered for ranking as stated above, the key consideration seems to be the proximity to State Highway routes north and north-west of Auckland.

¹ Makey, L., & Awatere, S. (2018). *He mahere pāhekoheko mō kaipara moana – integrated ecosystem-based management for Kaipara harbour*, Aotearoa New Zealand. Society & Natural Resources, 31(12), 1400-1418.

² IKHMG (2011), Kaipara Moana – *He Mahere Rautaki Whakakotahi* – Integrated Strategic Action Plan (2011-2021), Creating a healthy and productive Kaipara Harbour

Selecting this site could enable (subject to the private plan change and resource consent processes) a future landfill in this location within the Wayby upper catchment and the Kaipara receiving environment. However, on the available evidence we are unable to confirm whether the applicant has undertaken any due diligence through an appropriate site verification process to understand its suitability and the impacts on the receiving environment.

To assess the suitability of the location for a potential future municipal landfill, it would be useful if the applicant could provide additional information on the site validation process in its evidence for the hearing.

2.3 Operation of the landfill and phasing

Section 4.3 of the Engineering report provides details of two scenarios explored for the operation of proposed land fill within sub-precinct A (valley 1). These are to start operation from the bottom of the valley and work up, or start at the top of the valley and progressively form cells down the valley. The report also discusses the pros and cons of the two scenarios. Based on the experience of other landfill sites, including the existing nature of the location, it concludes that a combination of the two approaches could be adopted for the operation of the Auckland Regional Landfill. The report acknowledges that loss of stream habitats cannot be avoided when selecting a valley system for an establishment of landfill operation activity.

As a result, the applicant has provided a staging plan indicating phasing of landfill. This plan depicts the stormwater management within each stage of the landfill operation, including the stormwater treatment system (pond designs). Table 4.2 of the Engineering Report provides details of landfill phasing.

Mr Ken Tomkins, Senior Healthy Waters Specialist considered that details of landfill phasing, performance of the stormwater treatment detention ponds/wetland should be assessed at the resource consent stage, rather than at the plan change stage.

Detailed stormwater management plans are recommended and will be required at the time of resource consent that demonstrate discharges to land and water from legally established landfills. It is important that stormwater management plans demonstrate all stormwater treatment and mitigation systems are continuously functional throughout all phases for managing adverse effects associated with the development and operation of the landfill activity within the precinct. This also includes ensuring that the stormwater treatment detention ponds/wetland have capacity to adopt all storm events to avoid draining untreated runoff to adjacent streams or receiving environment. The applicant's Engineering Report states that all stormwater ponds/wetlands will be designed in accordance with Council's GD01 Guideline document.

Relief sought:

Should the proposed plan change be accepted, the following changes are recommended in the Auckland Regional Landfill Precinct:

Include Special Information Requirement under I617.9 to provide detailed stormwater management plans that demonstrate discharges to land and water from legally established landfills. The proposed specific information requirement is to show that all stormwater

treatment and mitigation systems are designed and continuously functional throughout all phases of the landfill development and operation within the precinct.

I617.9. Special information requirements

1. Comprehensive stormwater management plans that demonstrate
 - a) location and extent of infrastructure, including areas of on-site stormwater management
 - b) proposed staging of development
 - c) how stormwater treatment and mitigation systems are continuously functional throughout all phases
 - d) aftercare of the landfill site
 - e) an assesment of downstream flooding, erosion impacts and appropriate mitigation measures

2.4 Water quality, erosion and sedimentation

Ms Sarah Nolan, Healthy Waters Specialist from Waterways Planning team has reviewed the proposal from a perspective of sedimentation and water quality and has raised several concerns with regards to insufficient information in the technical documents. In summary, Ms Nolan states:

- The proposed construction of the landfill has projected an overall increase of 2% sediment discharges in the sub-catchment (sub-catchment refers to the greater Hōteio River catchment). While the proposal states that this increase in sediment loads within Kaipara Harbour will be insignificant, there is insufficient evidence to show this. Any increase in sediment loading into Hōteio catchment is a significant quantity when the Hōteio catchment is responsible for approximately 10% of the sediment being discharged into the Kaipara, of which is in significant decline in health due to excessive sedimentation.
- The landfill is proposed to be of significant size and the proposed plan change will have significant detriment to the tributaries on site and the Hōteio River. It is acknowledged that the proposal will provide sediment retention ponds, however, no sufficient information has been provided with regard to identifying any actual or potential stream erosion downstream as a result of increased peak flow rates and volumes due to the pre- and post-construction hydrological impacts of the landfill.
- The risk of stream bank erosion due to upstream development has not been sufficiently assessed or identified in the technical documents. This is significant as the waterways in the precinct are currently identified as highly incised and the proposed plan change does not mention how streambank protection will be provided aside from planting. Once the stream channel reaches the maximum amount of incision, the banks become unstable and as a means to re-stabilise themselves they begin to widen – otherwise known as erosion.
- Limited information in the proposal with regards to understanding the Total Suspended Solid concentrations between pre- and post-construction processes. Ms Nolan recommends the applicant request to use the Freshwater Management Tool developed by Auckland Council to better understand time-series and baseline of TSS concentrations of the landfill activity.

- Section 32 reports states that the landfill activity within the proposed precinct to be operated for approximately 34 years. No clear management and operation plan/process has been provided in the plan change with regards to the proposed stormwater treatment ponds and wetlands. In section 2.3 of the memo, Mr Tomkins also recommends a detailed stormwater management plan to be provided at the resource consent stage. These stormwater management plans should demonstrate how best practices will be maintained as suggested in the technical documents.

The proposed landfill site is located within a catchment with known erosion and sedimentation issues. Any increase of sediment being discharged into the Hōteio River (including Kaipara Harbour) or risk of potential stream bank erosion associated with the landfill activities needs to be assessed to avoid the effects on the environment. It is noted that many of the submissions raised concerns regarding risk of erosion potential, adverse effects of sedimentation and contamination discharges into the Hōteio River, including Kaipara Harbour.

I consider that the proposed Auckland Regional Land precinct needs to undertake an appropriate assessment of effects and appropriate measures in order to meet AUP OP outcomes on improving water quality (in this instance, existing erosion hotspots, areas of stream bank instability, sediment and contaminant of concerns for receiving environment). Such assessments should be undertaken to manage those effects during the resource consent stage.

2.5 Stormwater management /Flooding

Mr Ken Tomkins, Senior Healthy Waters Specialist has reviewed the proposal including technical documents submitted by the applicant's consultants with regards to perspectives from catchment planning that includes, effects on stormwater management, flooding, water quality/contamination, and streams.

Mr Tomkins identifies several potential adverse effects that the proposed landfill development could create to the local and downstream receiving environment unless the effects are appropriately addressed and managed at the future development stages for the establishment of new landfill activities. These adverse effects include the following (but are not limited to):

- Contamination from the landfill site entering the stream or groundwater systems
- Increase in peak flow rates and run-off volumes impacting on downstream flood levels and accelerating downstream erosion.
- Discharge of sediment into local streams, the Hōteio River and the Kaipara Harbour.
- Permanent loss of existing streams within the landfill work area.

Mr Tomkins's high-level review of the relevant technical documents also identifies the following effects:

- Given the size of large catchment of the Hōteio River, (approx. 215Km² upstream of the SHW1 Bridge), flooding impacts from the development of landfill on the large catchment is considered to be less than minor. Increases to flow volumes into the tributary streams from the proposed landfill site were calculated at less than 1% except for the 85 ha "southern block" which had a net increase in total discharge

volume of around 5%. However, calculation checks indicate that there may be some degree of flooding risk within the flood plain over rural land and tributary streams within the proposed precinct.

- From the review of technical report P, tributaries within 'Valley 1' (the landfill site within the Eastern Block) present a significant increase in peak flows rates for the 10yr and 100yr storm events. For this particular catchment, Appendix "B" of the Technical Report indicates that peak 100yr flow rates could increase from 22m³/sec for the undeveloped landfill site up to 37m³/sec during site operation. Major storm events can also result in serious erosion and stream stability issues from the single rainfall event and effects on this have not been identified in the section 9.2 of the Technical Report 'P'.
- Mitigation of peak flow rates is proposed in Technical Report 'P'. Full details need to be finalised at the time of resource consent.
- Each location and activity with the landfill processes could present potential contamination issues that need to be identified and managed. Details of leachate treatment and disposal treatment do not form of part of this technical memo. However, it is noted from the applicant's technical report 'P' that states, "*A key approach to leachate management is to keep leachate and stormwater separate*", which is a positive approach from a stormwater point of view as there would be low potential contamination risk present within land or stormwater within the precinct from this source.

3. Comments on the Precinct Plan Framework as proposed

The proposed Auckland Regional Landfill Precinct contains two Sub-precincts, namely: Sub-precinct A and Sub-precinct B. The land is zoned Rural – Production under AUP OP, the primary aim of which is to provide for the use and development of land for rural production activities and rural industries and services, while maintaining rural character and amenity values.

3.1 Precinct Description

The precinct description reflects the purpose of the proposed activity; however, I do not support part of paragraph 3 of the proposed precinct as this description is not consistent with the effects management hierarchy under the RMA. The s32 report does not provide sufficient information or evidence to understand the plan change proposal to ascertain any effects on the existing and or surrounding receiving environment identified during the site selection process. While paragraph three addresses biodiversity offset and ecological compensation for unavoidable impacts on the environment from the development of landfill activity, it assumes that having objectives and policies in the precinct achieves similar outcomes as avoidance, but this is not necessarily the case.

Relief sought:

Remove paragraph three entirely from the precinct description.

~~The precinct includes objectives and policies which allow for consideration of biodiversity offsets and ecological compensation for unavoidable impacts on natural resources arising from development of a landfill within the precinct. The matters in objective 4 and policies 5 and 6 provide direction on offset and compensation for activities within the precinct which have unavoidable impacts on freshwater systems, providing direction on how the provisions of E3, E1, E15 and Appendix 8 of the Auckland Unitary Plan are to be applied, which address the circumstances in which residual adverse effects on natural resources that cannot be avoided, remedied or mitigated may be offset and compensated.~~

3.2 Precinct I617.2 Objectives [rp/dp]

The proposed I617 Auckland Regional Landfill Precinct consists of six objectives and six policies and seeks to enable the establishment of landfill operation activity within the precinct, and highlights the importance of requiring effects to be appropriately managed to the maximum extent possible.

Some of the precinct objectives are consistent with the AUP OP within the proposed plan change, in particular those relating to stormwater and freshwater habitats Objectives I617.2 (3) (5) (6).

Objective I617.2 (4) is to enable a framework for managing adverse effects associated with the development and operation of the Auckland Regional Landfill precinct. However, this objective is considered not necessary as there are existing provisions under the RMA and the AUP OP (e.g. E3.2 (3)) that sufficiently provides directions for managing significant residual effects on rivers, lakes, streams and wetlands arising from development.

Objective 4

Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.

Relief sought: ~~Strike through~~ is to be read as deletion; Underlining is to be read as an addition

Objective 4

~~*Adverse effects on rivers, lakes, streams and wetlands arising from the development and continued operation of the Auckland Regional Landfill are avoided, remedied or mitigated, and significant residual adverse effects are, to the extent reasonably practicable, and as offered by the applicant, offset, or compensated where this will promote the purpose of the Resource Management Act 1991.*~~

3.3 Precinct I617.3 Policies [rp/dp]

Generally, I support the proposed precinct policies I617.3 (1) (2) (3) as they are consistent with the existing policies in the AUP OP. However, I do not fully support policies I617.2 (4), (5) and (6)(a)(b)(c) due to the following reasons.

I consider that the RMA, and the AUP OP already have adequate provisions to apply the effects management hierarchy (where the adverse effects cannot practically be avoided, remedied or mitigated) while recognising the provision of infrastructure. The Auckland Regional Landfill Precinct introduces its own new policies, in particular, Policies 4, 5 and 6, and where there are inconsistencies, the precinct states that the precinct Policies shall take precedence. I consider that these new Policies undermine/weaken the existing policy framework in the AUP OP. The purpose of the precinct is to enable provision for the development and operation of the landfill as infrastructure. However, compared to the existing provisions, the new policies suggest a lower level of effects management. Therefore, I consider the proposed wording under Policies 4, 5 and 6 are superfluous and introduce confusion to the existing provisions of the RMA and the AUP OP.

Relief sought:

- Rely on the existing AUP:OP provisions within chapter E3 for managing adverse effects on rivers, lakes, streams and wetlands.
- Remove Policies 4, 5 and 6 entirely within the Auckland Regional Landfill Precinct Plan

3.4 Assessment proposed policy framework in terms of effects management

It is noted that the typical characteristics of valley systems means that locating the proposed landfill in a valley system will result in stream reclamation and the permanent loss of stream habitat. Notwithstanding this, the rationale is unclear as to why the proposed objective and policy framework in the precinct chapter places emphasis on the regional significance of the

landfill and its operation while not completely offsetting the adverse effects associated with stream reclamation in line with typical Auckland Council best practice expectations.

For example, an offset or compensation ratio of at least 1:1 is proposed in Policy 6 and there is the potential that this may become a default target rather than a minimum requirement for offsetting adverse effects per meter of stream reclamation. A minimum 1:1 offset / compensation ratio per meter of stream reclamation is stipulated in the Auckland Council's Technical Report 2011/009. However, based on the Stream Ecological Valuation (SEV) / Environmental Compensation Ratio (ECR) calculations for determining the extent of offset works, compensation ratios greater than 1:1 are expected by that model. The average ratio for Auckland Streams is typically 3:1 (this takes into account a 1.5 multiplier to allow for some uncertainties in success). This ratio aligns with the concept of achieving a net benefit in terms of ecological function (AUP Policy E3.3 4(c)) and also accounts for the practicalities of implementing offsetting works such as the time lag for the offset benefits (e.g. plant establishment) to be fully realised in a manner contributing to stream habitat ecological outcomes.

This issue is further compounded by the uncertainty of when the offset works will take place where Policy 6b indicates '*any offset or compensation package may be staged over the long term*' rather than at the same time (or as close as is practicable) to when the stream reclamation is occurring as is typical best practice in the Auckland Region. The proposed 1:1 offset or compensation ratio therefore may not reasonably account for any extended timeframes before offset or compensation is achieved.

Policy 6 also creates a level of uncertainty as to when offset works or compensation will be triggered. In this regard a hierarchy should be established in order of offset works (preferred) followed by compensation. In this regard for compensation, the net benefit in terms of ecological function may be less than prescribed relative to the Stream Ecological Valuation calculation which is typically used for determining the extent of offsetting works for stream systems. It is also unclear on what basis the compensation for stream loss would be calculated.

It is noted that the precinct's activity table makes landfill activities discretionary and/or non-complying within the precinct for new landfills and this will require any future resource consent application to conduct a full assessment. Accordingly, clear directions must be provided through policies to those who make decisions on an application. Ambiguity or lack of strong direction in policy wordings could present confusion when setting the s104D(1)(b) test process at the future resource consent stage.

Relief sought:

Should the proposed Policies 4, 5 and 6 be accepted as part of the plan change, the following changes to Policies 4, 5 and 6 are recommended.

Policy 4

~~Subject to policy 5,~~ provide for works within freshwater systems in order to provide for the development and operation of the Auckland Regional Landfill, including the reclamation of streams within Sub-Precinct A, culverts or bridges required to access the landfill

Policy 5

~~Subject to policy 6,~~ require adverse effects from the Auckland Regional Landfill's construction and operation on freshwater systems to be avoided, remedied or mitigated generally and to the extent practicable, and encourage in particular the use of offsetting

or compensation to manage significant residual adverse effects of unavoidable reclamation of stream beds and associated loss of freshwater systems.

Policy 6

Where adverse effects cannot be avoided, remedied or mitigated, provide an offsetting and/or compensation package for offsetting or compensation, thereby enabling the Auckland Regional Landfill to be established as infrastructure, ~~while recognising that:~~

- ~~a. not all significant residual adverse effects will be able to be fully offset or compensated, however a ratio of at least 1:1 is expected;~~
- ~~b. any offset or compensation package may be staged over the long term and sites should be identified in the following order of preference – within the precinct, within the Hōteu River catchment, within the Kaipara Harbour catchment, and within the Auckland Region.~~

3.5 Activity Table 1617.4.1

Rules – (A3) (A5) and (A7)

Activities (A3) (A5) and (A7) in Activity Table 1617.4.1 pertain to discharges to land and water from new and existing landfills. These activities are not clear and lack clarity for determining which relevant rules are still applicable under AUP OP chapter E13 and E33. The AUP OP includes separate types of discharges to land and water and provides specific rules and assessment criteria under separate AUP OP Chapters, such as:

- Chapter E13 – Cleanfills, managed fills and landfills
- Chapter E30 – Contaminated land
- Chapter E33 – Industrial and trade activities

Having reviewed the proposed rules in Activity Table 1617.4.1 (A3) (A5) and (A7), it is my interpretation that discharges to land and water from landfills, rules under Chapter E13 and Chapter E33 will apply to future resource consents under the proposed precinct (I617). Activity Table E33.4.2 Rule (23) and (A24) pertaining to discharges of contaminants from a new industrial and trade activity requires resource consent as a discretionary activity. Furthermore, under Chapters E13 and E33 of the AUP OP, discharges from landfills are managed differently.

Page 17 of the s32 report states;

Many activities, such as stormwater, industrial and trade activities, discharges from closed landfills, and earthworks, will continue to be regulated by the Auckland-wide provisions in the AUP, rather than by the precinct provisions.

The proposed precinct provisions state:

- Discharges to land and water from landfills in Sub-precinct A that are otherwise categorised as non-complying is a Discretionary Activity (A3)
- Discharges to air, land and water from landfills outside of Sub-Precinct A is a Non-Complying Activity (A5)

- Discharges to land and water from existing landfills in Sub-precinct A unless a more lenient activity status applies is a Restricted Discretionary Activity (A7)

Given these rules in Table 1617.4.1 (A3), (A5) and (A7) are related to discharges from landfill activities, I seek clarification as to what activities these provisions intend to cover. It is not clear how the proposed new rules give effects to other relevant rules related to discharges in AUP OP Chapter E13 and E33.

I consider that the proposed rules above do not intend to replace any other applicable rules related to 'discharges from landfills' under Chapter E13 and E33, however, requires further clarity.

Comments:

Please provide further clarity on Table 1617.4.1 and its applicability of rule (A3) (A5) and (A7) in conjunction with other applicable rules in E13 and E33 in the AUP OP for future resource consents.

Table I617.4.1 Activity Table

Table I617.4.1 Activity Table specifies the activity status of land use and development activities in the Auckland Regional Landfill Precinct pursuant to sections 9 and 11, 13, 14 and 15 of the RMA 1991.

Currently, under Table H19.8. (A67) a Landfill within the and Rural Production Zone is a Non-Complying Activity. The proposal is to make landfill activities less onerous within the precinct. As the activity table specifies landfill activities as 'discretionary' within the precinct, to enable operation of future new landfill, a full resource consent assessment will be required to determine the nature of discharge consent to avoid, remedy or mitigate adverse effects on the environment.

Two sub-precincts are proposed (see Figure 2). Sub Precinct A denotes the area where landfill will be placed. According to Table 1617.4.1, new landfills within Sub-precinct A are a discretionary activity, while outside of Sub-Precinct A this will be a Non-Complying Activity. Sub-Precinct B denotes an area where works will be needed in the Natural Stream Management Area Overlay (NSMA), hence, a discretionary activity status is proposed rather than non-complying. Any works in the NSMA overlay outside of Sub-precinct B are still proposed as a Non-Complying activity.

Page 17 of the s32 report states;

"The proposed precinct has intentionally retained a discretionary status for new landfills to allow for a full assessment of any future application, rather than attempting to limit Council's discretion. However, a discretionary status is more appropriate for infrastructure and is more consistent with the treatment of other infrastructure activities in the Auckland Unitary Plan."...

Provided that the precinct is to enable landfill infrastructure, the proposed rules in Table I617.4.1 require any new landfill to be assessed through a full resource consent process without limiting Council's discretion. In addition to the proposed rules in the precinct, other relevant provisions in any overlays, Auckland-wide provisions in the AUP OP also apply when assessing effects on stormwater related matters.

Comments:

HW generally supports the proposed precinct rules and considers these appropriate to minimise adverse effects on landfill development in relation to stormwater management.

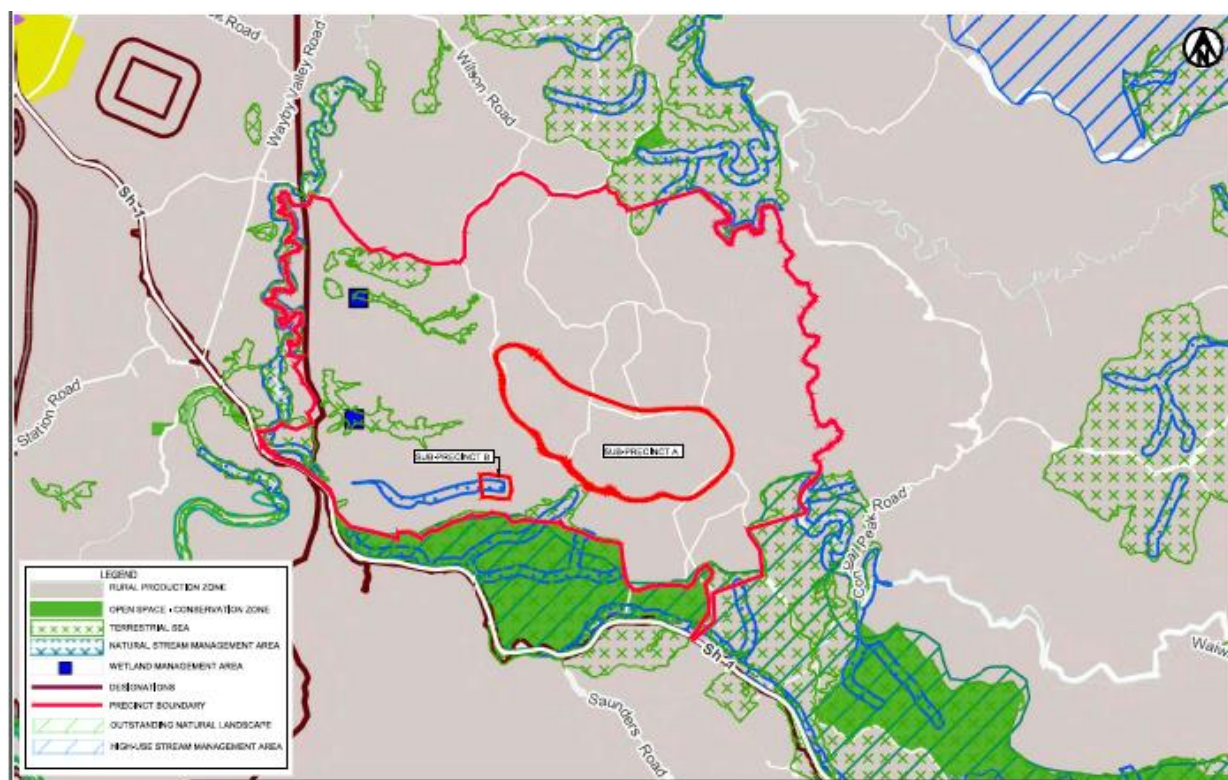


Figure 2: The proposed precinct plan

4. Applicant’s assessment

The applicant’s s32 report provides an assesment on the proposal against relevant objectives and policies under the AUP OP Chapter B7, E1, E3, D4, D8 and D9 which are related to stormwater, freshwater and ecological significance.

The applicant’s assesment has provided a heavy focus on the need for enabling a landfill as an infrastructure facility required in response to rapid growth of Auckland region. They propose the planning framework in I617.7 Auckland Regional Landfill Precinct that is generally consistent with the overall direction of the AUP OP. Provided the rapid growth in Auckland region, the applicant identifies that having a separate precinct for landfill infrastructure is important, and appropriate to establish an effective mechanism of managing environmental effects and to achieve the principles and the purpose of the RMA:

Page 52 of the s32 report states:

The precinct provisions direct that adverse effects should be avoided, remedied and mitigated wherever possible, while recognising that adverse effects on freshwater systems from landfill development in the precinct may be inevitable, due to the nature, scale and locational requirements of landfill development.

....

The nature of a landfill development within the Auckland Region will inevitably involve a large-scale project within a valley system, resulting in considerable changes to the

existing environmental conditions. This is similar to any large infrastructure development. The AUP has recognised this across the Plan’s provisions. Throughout the AUP, in both higher and lower level provisions, there are objectives and policies which recognise and provide for infrastructure development, including recognition that this may result in unavoidable adverse effects on natural values.

Appendix E of the s32 report provides an assessment of the regional policy statement, regional plan and district plan of the AUP OP in relation to the proposed planning provisions under Auckland Regional Landfill Precinct and how these new provisions fit within the overall objectives and policies within the AUP OP. The section 32 report claims that the proposed precinct objectives and policies means that development will be required to avoid, remedy and mitigate adverse effects. The applicant identifies that any new landfill within the precinct is a Discretionary or Non-Complying activity, therefore, any effects that may arise from a new landfill activity will be assessed and managed through a future resource consent process.

I agree that the proposed activity status (A1) and (A4) in the precinct for establishment of new and future landfills in Sub-precinct A and outside of Sub-Precinct A are appropriate; and including that the existing provisions of AUP OP Chapter E8 Stormwater Discharges and Diversion and E33 Industrial and Trade Activities continue to apply to the precinct, any actual and potential effects from future landfill will not result in adverse effects from stormwater systems to the environment.

5. Review of submissions

Healthy Waters have reviewed the submissions on PPC42 on effects related to freshwater management outcomes.

5.1 Submissions matters related to freshwater management outcomes

I have reviewed the submissions on Private Plan Change 42 (PC42) that cover the matters of stormwater, streams/waterways, water quality, erosion and sediment controls, and the Kaipara harbour receiving environment. A total 412 submissions were received, 104 of which raises issues relevant to water outcomes and effects on the receiving environment.

With regards to matters relevant to Healthy Waters, Table 1 below depicts a summary of decision requested by the 89 submitters.

Table 1: Summary of decision requested by submitters

Summary of decisions requested	Total No
Decline the plan change	100
Oppose the plan change modification	2
Amend the plan modifications if it is not declined	2
Total	104

The following submitters seek that the private plan change is declined or seeks amendments if not declined. I support the submission points seeking amendments and recommend that

submission points are accepted (insofar as my recommendations outlined in section 6 of this memo.

- Kaipara District Council (submission 15).
 - Submission point 15.1 seeks to add criteria to I617.9 to ensure that any potential effects on the Kaipara Harbour (including sediment and leachate) are the matter of further research and reporting (including possible compensation or bond amount) when considering a resource consent for a landfill.

- Watercare Services Ltd (Submission 120).
 - Submissions points 120.1/ 120.2/ 120.3 seek PPC42 to recognise the importance of the regional Waitemeta Aquifer and to amend the appropriate section of the precinct provisions.
 - Submission points 120.6/ 120.7/ 120.8/ 120.9 seek amendments to the PPC42 precinct policies. However, I recommended to delete Policy 6 entirely within the precinct. Nevertheless, should the proposed Policies 4, 5 and 6 be accepted as part of the plan change, I recommend the inclusion of submission point 120.9 into Policy 6.
 - Submission points 120.13/ 120.14/ 120.15/120.16/ 120.17/ 120.18/ 120.19 seek clarifications and request amendments to the PPC42 Activity Table I617.4.1 to avoid adverse effects on the water quality and quantity of the Regional Aquifer.

- Department of Conservation (Submission 148)
 - Submission points 148.4/ 148.5/ 148.6/ 148.7/ 148.8/ 148.9 seeks further justifications and clarification with regards to avoidance of adverse effects on the ecological significance within the site and surrounding areas by the proposed activity (Natural Stream Management Areas, Wetland Management Areas and Significant Ecological Areas). These submission points suggest amending the plan modifications if PPC42 is not declined.

The following Table 2 provides a summary of the key submission points raised by the other 85 submitters relevant to any potential and /or actual effects with regards to location of the landfill, Tributaries of the Hōteu River, Kaipara Harbour, including risk of flooding and sedimentation loading due to the landfill activity.

The submissions seek that PPC42 is declined and do not seek amendments to the proposal.

Table 2: summary of key submission points/issues raised by other 85 submitters

Submission number (s)	Summary of key issues
7.1 / 8.1 /9.1/ 20.1/ 28.1/ 34.1/ 44.1/ 66.1/ 69/1/ 76.1/ 82.1/ 95.1/ 100.2/ 108.1/ 126.1/ 128.1 / 136.1/ 138.1/ 141.1/ 142.1 / 148.1/ 149.1/ 157.1/ 178.1/ 182.1/ 232.1/ 235.1/ 354/ 355.1/	<p>Unsuitability of the location of Wayby Valley catchment for the proposed landfill activity</p> <ul style="list-style-type: none"> • The Wayby Valley catchment is not the appropriate location to construct a landfill activity due to potential environmental risks

<p>356.1/ 376.1/ 394.1/ 395/ 396/ 408.1/ 409.1/ 410.1</p>	<p>that it could bring to the natural receiving environment.</p> <ul style="list-style-type: none"> • The location of the valley is a high watershed area that feeds directly to Kaipara Harbour • The location of the proposed landfill called 'Springhill Farm'. The name is due to underground water table and the valley receives the highest rainfall in the Auckland region • A location that receives a high rainfall in the region and faces severe weather conditions. These effects could directly impact the operation of the landfill resulting significant effects on the environment • Landfill in location where SEA, delicate ecosystem and groundwater table is inconsistent with the NPSFM
<p>8.1/ 12.1/ 13.1/ 15.1/ 20.1/ 21.1/ 28.1/ 29.2/ 44.1/ 54.1/ 57.1/ 59.1/ 66.1/ 67.1/ 69.1/ 70.1/ 72.1/ 74.1/ 76.1/ 82.1/ 87.1/ 92.1/ 99.1/ 104.1/ 107.1/ 108.1/ 115.1/ 119.1/ 121.1/ 122.1/ 126.1/ 128.1/ 130.1/ 131.1/ 132.1/ 132.2/ 136.1/ 138/ 141.1/ 142.1/ 143.1/ 144.1/ 146.1/ 148/ 149.1/ 150.1/ 152.1/ 157.1/ 167.1/ 169/ 171.1/ 182.1/ 187.1/ 188.1/ 189.1/ 190.1/ 191.1/ 192.1/ 194.1/ 199/ 200/ 229.1/ 230.1/ 231.1/ 233.1/ 345.1/ 346.1/ 347.1/ 348.1/ 349.1/ 351.1/ 355.1/ 356.1/ 369.1/ 376.1/ 394.1/ 395/ 396/ 399.3/ 401.1/ 407.1/ 408.1/ 409.1/ 410.1/ 412</p>	<p>Unavoidable impacts on the tributaries of Hōteu River and Kaipara Harbour receiving environment due to risk of contaminant discharges and sedimentation loading</p> <ul style="list-style-type: none"> • Impacts on the tributaries of the Hōteu River and other natural waterways close to the PPC42 site leading to Kaipara Harbour • The Kaipara Harbour is a nationally significant environment and recognised as the second largest harbour on Earth. The harbour supports the breeding of 80% of NZ's snapper population and is home to many native fauna and flora species • There are existing effects on headwaters of the Kaipara Harbour. Kaipara Harbour currently receives approx. 700,000 tonnes of sediment loading each year. A significant issue is bad land management practices - a landfill will inevitably add further sedimentation plus toxic leachate to the existing loads. Any additional sedimentation increases will have an adverse effect on the fragile Kaipara Harbour ecology. • The proposal has potential to undermine the values of the Hōteu catchment, and the Kaipara Harbour. Restoration of the catchment is commencing as part of the DOC's Nga Awa Programme for Priority Rivers, as one of seven priority catchments in Auckland Council's

	<p>Sustainable Catchments programme and as part of MFE’s first named exemplar catchment</p> <ul style="list-style-type: none"> • New budget and resourcing allocated by the government for improving the water quality and protecting waterways with planting and sediment controls within Kaipara Harbour environment. The PPC42 contradicts with these future strategic directions of improving the water quality of this valuable natural environment. • Kaipara is currently recognised as the most degraded ecosystem in Aotearoa and has sedimentation pollution through unsustainable land use and management. There are existing issues of approx. 70% sedimentation loads and an undetermined amount of leachate from old landfills currently entering into the Kaipara Harbour through the Northern Wairoa River. • Potential leachate and toxic waste will be reaching into Hōteu River/creeks/streams and finally Kaipara Harbour. • Adverse effects on extensive natural waterways.
<p>8.1/ 24.2/ 28.1/ 29.2/ 34.1/ 40.1/ 44.1/ 66.1/ 76.1/ 82.1/ 115.1/ 128.1/ 130.1/ 148/ 167.1/ 199/ 348.1/ 394.1/ 411.1/ 412</p>	<p>The proposal is contrary to the purpose and principles of the RMA, National Policy of Freshwater Management, Auckland Unitary Plan (Operative in Part)</p>
<p>8.1/ 23.1/ 66.1/ 82.1/ 100.2/ 108.1/ 119.1/ 128.1/ 149.1/ 157.1/ 159.1/ 232.1/ 235.1/ 345.1/ 346.1/ 394.1/ 395</p>	<p>Potential increase in flood risks, extreme weather conditions can cause erosion, increase contaminant and sediment discharging into waterways and Kaipara Harbour</p>

Comments:

The majority of the above submission matters have been covered in this Technical Assessment. Section 2.1 and 2.2 discussed matters related to the site selection process and the selected site.

Mr Tomkins stated that the loss of some existing streams in the vicinity of the landfill worksite seem inevitable. However, compensatory local or off-site enhancement works should be required to restore the ecological balance.

Ms Tomkins’s assessment further stated that an increase in total suspended solid (TSS) loads from the landfill will have impacts on the downstream environment –the Hōteu River and connecting tributaries, and ultimately, the Kaipara Harbour. Impacts of the increased sedimentation will have adverse effects on the aquatic and marine life, including the widely

known snapper breeding grounds in the Kaipara Harbour. WMNZ has indicated that some increase in the quantity of TSS is expected. Therefore, further evidence of proposed avoidance mitigations, and otherwise minimisation of the impacts from the development of the landfill be provided. It will be important to use “best practice” to keep TSS discharge to a minimum and work on the basis of continuous improvement throughout the life and aftercare of the landfill.

Several submission points have raised issues with regards to flooding effects from the future landfill and this information is not sufficiently addressed by PPC42. In Section 2.5, Mr Tomkins’s review confirmed that one of the tributary streams within Valley 1 present significant increase in peak flows for the 10yr and 100yr events, therefore, Mr Tomkins suggested that further flooding assessment will be required within the landfill site to identify effects.

5.2 Summary of mana whenua and Te Ao Māori based submissions

At the time of writing, five mana whenua, or iwi entities, had submitted in opposition of PC42. These iwi are Te Uri o Hau (submission 35), Ngāti Whātua Ōrākei (submission 45), Te Rūnanga o Ngāti Whātua (submission 132), Ngā Maunga Whakahii o Kaipara (submission 149) and Ngāti Manuhiri (submission 138). A further three submissions were received in opposition of PC42. A response from the hapū Ngāti Rango (submission 412); a response from a mana whenua from Ngāti Whātua o Kaipara; and a submission from the Tinopai Resource Management Unit as a Te Uri o Hau / Ngāti Whātua mana whenua which provides more evidence through a Cultural Impact Assessment (submission 398). An additional 46 submissions reference or note the impact of PC42 in relation to Te Ao Māori (the Māori world view).

Ms Mendez reviewed feedback from these submissions and noted the areas that the plan change would have negative impacts on (Table 3). These areas include, but are not limited to the below:

- Te mauri (o te wai) (life supporting capacity)
- Intergenerational impacts
- Mana whenua, their culture, values and traditions
- The Resource Management Act 1991 Part 2
- The principles of te Tiriti o Waitangi (Treaty of Waitangi)

Mana whenua submissions have noted that a landfill would diminish Mauri, or the life supporting capacity, of the environment and water. They identified the permanent deposit of waste in Papatūānuku would damage it and create a significant risk of pollution of the Hōteu River, Kaipara Moana and wider environment. This was raised as a concern for the present generation, but also posed an intergenerational legacy for the future of their iwi, whanaunga (relatives) and the communities living in the area.

Diminished mauri as well as the potential tangible risk of pollution of these waterways would create significant cultural impacts that would deny mana whenua the ability to exercise tikanga, customary rights, Kaitiakitanga and other traditions and values in Te Ao Māori. Those include the impact on the Kaipara Moana as the traditional food basket, the preservation of taonga (such as the Hōteu River and the Hochstetter Frog and its habitat), and the work carried out by kaitiaki to protect the Kaipara catchments, its rivers and tributaries.

Additional values speak to the right to exercise Kaitiakitanga, the misalignment of PC42 with the intent of the RMA 1991 Part 2 and the associated lack of engagement. The submissions note that inadequate opportunity has been provided for mana whenua to participate in the sustainable management of taonga and ancestral lands within their rohe and the exclusion this has created.

This is noted in submissions as a breach in the principles of Te Tiriti o Waitangi and mana whenua ability to exercise rangatiratanga – e.g. the rāhui implemented by Te Rūnanga o Ngāti Whātua in opposition to the proposal that has not been observed.

Table 3. Summary of submissions provided by mana whenua entities

Submission Point	Name of submitter	Summary of relief sought	Te Ao Māori impacts / Reasons for opposition
35	Environs Holding Ltd environmental subsidy of Te Uri o Hau Settlement Trust	Fully opposes PC42	Breaches the principles of te Tiriti o Waitangi. Poor engagement leading to inadequate information on the impacts on cultural values. Inconsistent with the RMA 1991 and will result in adverse effects on mana whenua, their culture and traditions, whanaungatanga, tikanga, and exercising of Kaitiakitanga. Creates potential intergenerational impacts and will adversely affect mauri and environment
45	Ngāti Whātua Ōrākei	Fully opposes PC42	Breaches the principles of te Tiriti o Waitangi. In violation of tikanga Māori and Atua (ancestors). Unsustainable, will damage Papatūānuku, and will adversely impact the mauri of the Hōteao and Kaipara Moana. Moving waste from the rohe of Ngāti Whātua Ōrākei to another iwi rohe degrades the mana of both. Inconsistent with the RMA 1991 and will result in adverse effects on mana whenua, their culture and traditions, whanaungatanga, tikanga, and exercising of Kaitiakitanga. Creates potential intergenerational impacts and will adversely affect mauri and environment. Poor engagement leading to inadequate information on the impacts on cultural values.
132	Te Rūnanga o Ngāti Whātua	Fully opposes PC42	Breaches the principles of te Tiriti o Waitangi. Have not engaged leading to inadequate information on the impacts on cultural values. Would subject the iwi to further injustice in contradiction to the Settlement Act for Ngāti Whātua. Inconsistent with the RMA 1991 and will result in adverse effects on mana whenua, their culture and traditions, whanaungatanga, tikanga, and exercising of Kaitiakitanga. Creates potential intergenerational impacts and will adversely affect mauri and environment.
138	Ngāti Manuhiri Settlement Trust	Fully opposes PC42	Inadequate and inappropriate engagement. Impacts significant cultural sites, noting that maunga in the area are sacred to Ngāti Manuhiri and representative of the mauri that they are kaitiaki of. Impacts on customary rights and Ngāti Manuhiri whanaunga (relations). Threatens taonga species. Creates potential intergenerational

			impacts and will adversely affect mauri and environment. A landfill will permanently diminish the health of the whenua and its mauri.
149	Ngā Māunga Whakahii o Kaipara Development Trust	Fully opposes PC42	Breaches the principles of te Tiriti o Waitangi. Have not engaged, excluding mana whenua from the process. Hōteu River and Kaipara Moana are culturally significant (recognised as Significant Ecological Areas) that kaitiaki have been working to improve. Inconsistent with the RMA 1991 and will result in adverse effects on mana whenua, their culture and traditions, whanaungatanga, tikanga, and exercising of Kaitiakitanga. No acceptance of activities that destroy the mauri in the Kaipara Moana Catchments. Creates potential intergenerational impacts and will adversely affect mauri and environment. Threatens the Kaipara Moana and its catchment which is a part of Ngāti Whātua o Kaipara whakapapa and tikanga and would impact the marae communities in the area.
398	Tinopai Resource Management Unit	Fully opposes PC42	Breaches the principles of te Tiriti o Waitangi. Have not provided the opportunity for participation or meaningful engagement, excluding mana whenua from the process and failed to recognise the rāhui in place. Removes mana from the whānau and hapū and brings harm to their members. Inconsistent with the RMA 1991 and will result in adverse effects on mana whenua, their culture and traditions, whanaungatanga, tikanga, and exercising of Kaitiakitanga. Creates potential intergenerational impacts and will adversely affect mauri, Papatūānuku and environment. Loss of streams, amenity and quality of environment. Proposal does not adequately assess, is contrary to the Unitary Plan provisions and does not give effect to Regional Policy Statements. (Further detail covered by Cultural Impact Assessment included as part of the submission)
410	Tracy William Davis, Ngāti Whātua o Kaipara	Fully opposes PC42	The applicant has not fully engaged with Ngāti Whātua. The landfill will be the most damaging and long-term wound to happen to the Kaipara

			harbour and will impact the life force of mana whenua taonga and their food bowl. The harbour is currently at a tipping point, which may not recover from this activity, especially with an increased risk of climate change related storms that have previously resulted in landfills being breached.
412	Ngāti Rango	Fully opposes PC42	The Kaipara is the spiritual home of the present day Ngāti Whātua. It is the recipient of all that flows from the Hōteio catchment and proposed landfill. The application contributes to the alienation of Ngāti Rango from their lands, waters, wāhi tapu and other taonga, and contributes to the erosion and suppression of their culture and traditions. Potential to affect traditional relationships across the ridgelines and areas of the catchment that have acquired mana and wairua. Application ‘takes’ but does not give back meaningfully from a cultural perspective to the environment. No understanding or provision for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga.

Comment:

Significance of te mauri o te wai and the supporting values have been captured in council's 'Our Water Future' discussion document. Should proposed plan change 42 be accepted, I recommend that adequate effort be given to properly address the issues raised in these submissions. As the precinct requires a fully notified discretionary resource consent to establish a new landfill and the precinct includes provisions around cultural values, I consider that this provides scope to address the cultural effects raised by iwi submissions through any future resource consent application under the precinct.

6. Conclusion and recommendations

The purpose of the plan change is to introduce a new Precinct named Auckland Regional Landfill (I617) to the existing Auckland Unitary Plan (Operative in Part). The precinct introduces new provisions to manage the development and operation of a potential landfill activity within Wayby Valley site. The total precinct area comprises approx. 1020 ha and the

landfill footprint for waste placement will occupy approximately 60 ha of Sub-Precinct A within the precinct area. The site is zoned Rural – Rural Production under AUP OP.

The landfill operation will be served by stormwater management infrastructure owned and operated by the applicant generally comprising water quality treatment/detention ponds serving each phase of the landfill process. No stormwater management infrastructure is proposed to be vested to the Auckland Council.

I recognise the importance of municipal landfills as a vital piece of regional infrastructure and an important component of the overall waste management system for Auckland. If PC42 is approved, I consider the following recommendations (including the specific relief sought in this memorandum) must be taken into account to ensure any adverse effects on the environment are appropriately avoided, remedied or mitigated in a way that is consistent with Part 2 of the RMA and direction given by the Regional Policy Statement.

These recommendations include:

- The applicant should provide additional information on the site selection, full options assessment and site validation processes in its evidence for the hearing.
- As it is currently drafted, the proposed precinct policies, specifically Policy 6 provides insufficient recognition of permanent loss of existing streams and off-setting and compensation works for such losses. This policy insufficiently addresses the effects management hierarchy of the RMA and the AUP OP Chapter E3. Therefore, the proposed precinct provisions should be removed, as recommended in Section 3.3 of this memo.
- Make all other recommended changes in Section 3 of this memo to the precinct plan
- Need further clarity on Activity Table 1617.4.1 (A3) (A5) and (A7) pertaining to discharges to land and water from new and existing landfills. These activities are not clear and lack clarity for determining which relevant rules are still applicable and should read in conjunction with other applicable rules in AUP OP chapter E13 and E33 for future resource consents.
- Because of the limited physical shape configuration required for a major landfill site it is almost inevitable some natural streams within the working landfill will be permanently lost. It is therefore important that;
 - Permanent loss of existing streams be kept to a minimum, and
 - Off-set environmental and stream enhancement works be carried out to compensate for the stream loss.
- Increases to off-site flooding in the Hoteo River is not considered to be an issue. However, stream assessments will be necessary in some of the tributary streams draining the work sites to confirm whether increases in peak stormwater flows will lead to unacceptable levels of stream instability, erosion or flooding, and also an assesment of any mitigation measures is required.
- It is recommended that the applicant carry out a full assessment of the potential impact of increased peak flows in the tributary streams from the developed landfill site located in Valley 1 down to the Hoteo River at the time of resource consent

- Detailed management plans will be required at the time of resource consent and it is important that all stormwater treatment and mitigation systems are continuously functional throughout all phases of the project including aftercare of the landfill site. This information must be provided at the time of resource consent applications therefore, Special Information Requirement is required in the Precinct Plan as recommended in Section 2.3 of this memo.
- The development of a landfill within the proposed Auckland Regional Landfill Precinct would present challenges to the existing and future stormwater environment. The Technical Reports have shown, that by using appropriate risk management systems, it is feasible, from a physical perspective, to mitigate the risk of stormwater contamination down to an acceptable level within the Hotoe River catchment.

21 09 2020

To: Ryan Bradley, Principal Planner, Auckland Council
From: Arsini Hanna, Senior Specialist Advisor – Stormwater Wastewater & Industrial and Trade Activities Specialist Unit, Resource Consents Department

Subject: Private Plan Change – Auckland Regional Landfill – Industrial or trade activity (ITA), Diversion and discharge of stormwater (SW) and Damming of stormwater Assessment

1.0 Introduction

1. I have undertaken a review of the private plan change, on behalf of Auckland Council in relation to the diversion and discharge of stormwater, stormwater damming and industrial and trade activities assessing the potential environmental effects on the receiving environment.
2. Qualifications and experience

My name is Arsini Hanna I hold a PhD degree, in Inorganic Chemistry (with Honours), from Birmingham University, United Kingdom.

I am a Senior Specialist Stormwater, Wastewater and Industrial and Trade Activity within the Resource Consents Department with 11 years' experience working at Auckland Council.

Before I joined the Auckland Council, I had 31 years' experience as an environmental professional working in the Middle East and New Zealand (as principal environmental consultant). My areas of experience included client liaison, working with industries on environmental management consent processing and compliance, contaminated sites, environmental audits, green building rating projects and best practices, environmental and health and safety, emergency response management system, environmental effects assessment, environmental monitoring and management systems and implementing training programs to raise environmental awareness of officials.

My duties at Auckland Council have included reviewing applications for resource consent including major infrastructure projects, shovel ready projects, residential and mixed-use developments, subdivisions and fast track applications, writing resource consent permits for diversion and discharge of stormwater, industrial or trade processes and undertaking compliance monitoring of industrial or trade process sites in the Auckland region to ensure compliance with the Resource Management Act.

I am a warranted officer pursuant to s38 of the Resource Management Act.

In New Zealand - Winner (Jointly with Winstone Aggregates team) of the Caernarfon Award 2005/International Recognition for Environmental Excellence.

3. Previous highlights

On behalf of the Iraqi Ministry of Environment (Environmental Manager within the Ministry of Industry) Participated in finalising the Iraqi Environmental and Protection Act and provided advice on the level of authority delegation and decision making for developing main country policies, procedures and guidelines regarding stormwater discharges, material balance and waste management, and I was also involved in the review, development of stormwater discharges long range goals.

Participated in international meetings for UNSCO, UNIDO and KYOTO and have published papers on lead and heavy metal pollution and cleanfill in international journals.

4. In writing this memo, I have reviewed the following documents:

- *Auckland Regional Landfill Private Plan Change Request, Assessment of Effects and section 32 Analysis, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated February 2020*
- *Auckland Regional Landfill – Risk Management Assessment (AECOM, 23 May 2019).*
- *Auckland Regional Landfill Assessment of Environmental Effects (T+T May 2019) and associated supporting Technical Reports.*
- *Stormwater and Industrial and Trade Activity, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated May 2029*
- *Engineering Report, Prepared for Waste Management NZ Ltd by Tonkin & Taylor Ltd, dated May 2029*
- *Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 15 November 2019)*
- *Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 3 February 2020)*
- *Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 4 March 2020)*
- *Submissions – Online Submission Report – summary of PPC42 submissions, prepared by Auckland Council.*
- *‘Stormwater and Industrial and Trade Activity’, dated 30 May 2019 and prepared by Tonkin & Taylor, information is hereby referred to as the ‘Stormwater and ITA Report’.*
- *‘Draft Industrial and Trade Activity Environmental Management Plan’, dated 30 May 2019 and prepared by Tonkin & Taylor.*
- *‘Stormwater pond damming’ dated 20 December 2019 and prepared by Tonkin & Taylor, information is hereby referred to as the ‘Stormwater Damming Report’.*
- *Additional information in response to a request for further information under section 92 of the Resource Management Act (RMA) was received by emails to the Auckland Council on 06, 11 & 20 December 2019.*
- *Auckland Regional Landfill Private Plan Change Request/ Assessment of Effects and Section 32 Analysis prepared by Tonkin & Taylor Ltd (T & T) and dated July 2019.*
- *Water Quality Baseline Monitoring Report prepared by T & T dated 30 May 2019.*
- *In addition of brief review, the remaining documents (ecological, hydrogeology assessment) as required.*

2.0 Key Issues related to Industrial or trade activity (ITA), Diversion and discharge of stormwater (SW), and Stormwater damming

1. The plan change seeks to introduce a new Precinct named Auckland Regional Landfill (I617) to the existing Auckland Unitary Plan (Operative in Part) (‘AUP-OP’). The purpose of the proposed precinct is to enable the efficient construction and long-term operation of landfill activities within the proposed site. The landfill operation (as outlined in the related resource consent application) would be served by stormwater management infrastructure owned and operated by the applicant generally comprising water quality treatment/detention ponds serving each phase of the landfill process. No stormwater management infrastructure is proposed to be vested to the Auckland Council.
2. The site is owned by Waste Management New Zealand Limited (the applicant) and is located at 1232 State Highway 1, Wayby Valley. Details of the site, including legal

descriptions are included in Table 1.3 of the private plan change request report of the applicant.

3.0 Applicant's assessment

The applicant has summarised the assessment of the environmental effects associated with groundwater, flooding, and surface water in sections 4.6, 4.7 and 4.9 of the private plan change request. In addition, there are also specialists reports in the Technical Appendices and the additional information requested under Clause 23 and Section 92 of the RMA.

Industrial or trade activity (ITA)

Business activities result in typically more operational and vehicle generated contaminants than residential activities due to more vehicle movements and potential large car parks. The potential Landfill activity under PC42 is listed as a high-risk activity under the AUP O-P and thus is subject to the controls and requirements of Chapter E33 of the AUP O-P.

The applicant has considered the following in his assessment

(1) Potential adverse effects (including cumulative effects) are appropriately minimised or mitigated, taking into consideration all of the following:

(a) the nature of the contaminants and associated discharge to the receiving environment;

(b) the sensitivity of the receiving environment, including coastal waters, and its susceptibility to the adverse effects of the contaminants;

(c) the extent to which contaminants from the site contribute to incremental and cumulative adverse effects on receiving environments including adverse effects on biodiversity, community and mana whenua uses and values;

(d) whether it is practicable to reduce existing adverse effects including site and operational constraints; and

(e) whether stormwater contaminants are managed entirely onsite or whether there is an authorised stormwater management device or system in the catchment that is designed and sized to accommodate the stormwater runoff and contaminant loads and achieve appropriate mitigation.

Comment

I consider applicant's assessment is generally adequate in terms of the fundamental facts relating to discharges with potential contaminants of concern. The private plan change request recognises that landfills have the potential to discharge contaminants and hazardous pollutants with potentially significant adverse effects on the environment and PC42 is supported by a range of technical reports assessing these effects.

The potential effects can be mitigated through the stormwater management techniques. The details of how this will be achieved for the specific proposed development can be determined through the resource consent process. I note that PC42 does not 'enable' a new landfill but still requires a resource consent for a discretionary activity.

The AUP O-P, Regional Policy Statement (RPS), Policy B7.4.2(6) is to "Progressively improve water quality in areas identified as having degraded water quality through managing subdivision, use development and discharges."

I consider the proposed Auckland Regional Landfill Precinct is still subject to the objectives, policies and rules of E33 - Industrial and trade activities of the Unitary Plan. Therefore, precinct does not diverge from the policy direction of the Regional Policy Statement.

Stormwater - Flooding

The proposed construction of the landfill (in the related resource consent application) has projected an overall increase of 2% sediment discharges in the sub-catchment (sub-catchment refers to the greater Hōteu River catchment). Stormwater run-off from the landfill footprint and ITA activity areas (excluding any leachate) is proposed to pass through the stormwater treatment detention ponds designed in accordance with Stormwater Management Devices in the Auckland Region; Guidance Document (GD01). Stormwater is then proposed to pass through a wetland (to provide water quality treatment based on the 90th percentile storm depth and extended detention for the 95th percentile storm depth for erosion protection), to reduce sediment and potential contaminant discharges.

The management of adverse effects on flooding will largely be determined by the landfill design. This will be assessed by the Auckland Council Development Engineer at the resource consent stage. I understand the flooding is being specifically assessed under a separate specialist memo.

Stormwater damming

In respect to stormwater damming the proposed precinct is silent on this. There are no activities in the activity tables specifically mentioning damming of water. Therefore, damming is managed in accordance with the requirements of *Chapter E7 - Stormwater damming*.

Proposed precinct provisions and their consistency with Auckland Unitary Plan (operative in part).

The private plan change request details the provisions for infrastructure within the Regional Policy Statement and tension with the Non-Complying activity status for landfills (E13 and H19). I generally agree with the analysis of this and note that the activity statuses in the precinct require resource consents for stormwater and ITA discharges. These are subject to the normal tests for notification and assessments of effects that are largely identical to those conducted under Chapter E7, E8 and E33 of the AUP O-P.

The proposed objectives and policies for the precinct are stated to be 'in addition to' the Auckland-wide objectives and policies, such as those within E8 and E33. For any resource consent application received for the diversion and discharge of stormwater and industrial and trade activity within the precinct, I would therefore still consider the Regional Policy Statement and Auckland-wide Objectives and Policies as part of the assessment of effects.

Notably, the Policies require applicants to avoid, remedy or mitigate adverse effects of contaminants discharges within the Rural – Rural Production Zone. Further, the proposed precinct Policy relates to the adoption of the Best Practicable Option (BPO) and a precautionary approach to avoid, remedy or mitigate adverse effects from stormwater discharges. Therefore, I consider the precinct does not significantly diverge from the policy direction of the Regional Policy Statement with regards to the diversion and discharge of stormwater and industrial and trade activity.

In respect to stormwater, the proposed precinct can be managed in accordance with the requirements of *Chapter E1 - Water quality*, *Chapter E8 - Diversion and discharge of stormwater*, *Chapter E33 - Industrial and trade activity*, and *Chapter E7 - Stormwater damming*. The requirements for an integrated stormwater management and discharge of contaminants approach to be taken, apply to both the proposed precinct and the underlying zoning/Auckland-wide provisions.

Chapter E9 - Stormwater quality - High contaminant generating car parks and high use roads will apply to any development which meets the definition of a high contaminant generating car park or high use road. I do not consider that there are any specific characteristics about the site of the proposed precinct that mean it would not be possible for suitable mitigation to be established through a resource consent process.

4.0 Submissions

More than four hundred (412) submissions have been received in response to the Plan Change.

I have reviewed submissions that raise Industrial and trade activity and stormwater quality. There are a number of submissions which raise stormwater and contaminant related issues. A summary of raised issues is below:

- Landfill Liner/containment related failure & degradation (with consequent leachate release to stormwater, the submitter referred to USA experiences).
- Liner failure and/or large 'event' (e.g. landslide, fire, etc.) that could cause a substantial leachate release (or other release) of contaminants - with consequent damage to the environment.
- Degradation/failure of the landfill liner over long-term time periods, and concurrent release(s) of leachate (or other) contaminants - given that the contaminants could last for hundreds of years.
- The proposal conflicts with the purpose and principals of the RMA, and other national directions e.g. National Policy Statement on Freshwater.
- Potential increase in flood risks, extreme weather conditions can cause erosion and increase contaminants and sediment discharging into waterways and eventually into the Kaipara Harbour.
- Use of management plans is to not sufficient to provide positive outcomes.
- Discharge of contaminated sediments into the Hōteu River, specifically total suspended particulate.

A specific downstream issue which has been raised by some submitters is the impact that an increase in the suspended solids loads from a potential landfill could have an effect on fish in the Kaipara Harbour. Some increase in the quantity of suspended solids discharged from the proposed landfill site is expected.

Each location and activity with the landfill process could present potential contamination issues that need to be identified and managed. Details of leachate treatment and disposal treatment do not form a part of this memo. However, it is noted from the applicant's Technical Report P that states, "*A key approach to leachate management is to keep leachate and stormwater separate*", which is a positive approach from a stormwater point of view, as there would be low potential contamination risk present within land or stormwater within the precinct from this source.

Stormwater from completed landfill areas (finished contours with final cover in place) will be controlled by permanent drainage systems and by practices such as grassing to minimise erosion.

5.0 Assessment of Industrial or trade activity (ITA), Stormwater discharge and Stormwater damming effects

I accept the methodology and conclusions, subject to some information that still needs to be provided.

Also I agree that the proposed activity status (A1) and (A4) in the precinct for establishment of new landfills in Sub-precinct A and outside of Sub-Precinct A are appropriate; and including that the existing provisions of AUP OP Chapter E8 Stormwater Discharges and Diversion, E7 Stormwater damming, E9 and E33 Industrial and Trade Activities continue to apply to the precinct, any actual and potential effects from future landfill will not result in adverse effects from stormwater systems to the environment.

6.0 Conclusions and recommendations

- The private plan change is consistent with the direction and framework of the Auckland Unitary Plan (Operative in Part) in relation to stormwater and ITA.

I can support the Plan Change for the following reasons:

- The effects on the environment related to stormwater quality (particularly E9 High contaminant generating car parks and high use roads and E33 Industrial and trade activities) can be adequately assessed.
- The private plan change is consistent with the direction and framework of the Auckland Unitary Plan (Operative in Part) in relation to stormwater and Industrial and trade activities.

Arsini Hanna

Senior Specialist – Stormwater Wastewater & Industrial and Trade Activities -Specialist Unit,
Resource Consents Department

A rectangular box containing a handwritten signature in black ink. The signature appears to read "arsini.hanna" in a cursive, lowercase font.

24th September 2020

Auckland Council
135 Albert Street

AUCKLAND

Attention: Ryan Bradley

ryan.bradley@aucklandcouncil.govt.nz



Dear Ryan,

**PRIVATE PLAN CHANGE 42 – AUCKLAND REGIONAL LANDFILL –
TRANSPORTATION ASSESSMENT**

HG REF: 1040-145261-02

Harrison Grierson Consultants Ltd ('HG') has been commissioned by Auckland Council ('Council') to undertake a peer review of the transportation related effects of the private plan change proposed by Waste Management New Zealand Limited ('WMNZ'). The proposal consists of the Auckland Regional Landfill Precinct (I617), which would apply over the underlying 'Rural – Rural Production Zone'.

This transportation assessment relates to Private Plan Change 42 – Auckland Regional Landfill (PPC42).

1.0 INTRODUCTION

I, Gary Black, have undertaken a review of the private plan change, on behalf of Auckland Council in relation to transportation effects.

I am a Chartered Professional Engineering with Engineering New Zealand and hold a Bachelor of Engineering degree with Honours in Civil Engineering. I have 30 years' experience in traffic and transportation engineering.

In writing this memo, I have reviewed the following documents:

- Auckland Regional Landfill Precinct I617 text.
- Assessment of Environmental Effects ('AEE') dated July 2019 prepared by Tonkin and Taylor, Appendix A – Proposed Plan Change.
- 'Integrated Transport Assessment' ('ITA') dated 22 May 2019 prepared by Stantec
- 'Section 92 Response' ('S92 Response #1') dated 8th November 2019 prepared by Tonkin and Taylor, including Appendix E – Traffic.
- 'Clause 23(2) RMA Further Information' dated 24th December 2019 prepared by Auckland Council.
- 'Clause 23 Response' dated 3rd February 2020 prepared by Tonkin and Taylor, including Appendix B – Traffic.

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- 'Section 92 Response – Tranche 5' dated 20th February 2020 prepared by Tonkin and Taylor, including Appendix E – Traffic.
- Public Submissions dated 13th July, 13, 20th August 20 and 2nd September 2 2020 collated by Auckland Council.

2.0 KEY ISSUES

From a transportation perspective, the key issues of PPC42, including the precinct provisions, include that:

- PPC42 does not align with the strategic objectives of Auckland Council nor at the national level. The applicant does not provide assessment of the proposed plan change against transport related regional or national plans and policies. I have provided a brief assessment of the proposed plan change against such relevant strategic policy documents. I consider the additions to the precinct provisions that I have recommended provide consistency with the strategic direction of the city.
- The ITA provides no consideration of alternatives to road transport for transportation of waste to the landfill site. There is no feasibility assessment or investigation into the option of transporting of waste by rail. Therefore, I recommend the following additional objective and policy:

1617.2 Objectives [rp/dp] -The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.

1617.3 Policies [rp/dp] – The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste where feasible.

- There is no waste truck trip generation limit included in the precinct provisions. I recommend the following additional Restricted Discretionary and Discretionary Standard:
The number of waste truck trip movements per day be limited to 1,000 waste truck movements per day.
- There is no recognition of logging activity in the precinct provisions, of which the plan change proposes to share access roads with. However, forestry is a permitted activity within the underlying Rural – Rural Production Zone. I consider that the underlying Rural – Rural Production Zone rules are sufficient, and logging activities need not be covering within PPC42.
- There are no provisions within the precinct provisions relating to the stopping of roads under the Local Government Act 1974, as raised by Auckland Transport. However, I believe it would be best addressed under the road stopping procedures under the Local Government Act (1974) and I consider that this does not need to be included in PPC42. I believe this could be covered under the separate resource consent application for the ARL

3.0 APPLICANT'S ASSESSMENT

To support the finding that the implementation of the precinct and its provisions are appropriate from a transport perspective, the applicant has provided the specialist transport reports for the separate resource consent application.

It is noted that these reports are an assessment for a specific landfill proposal. On the other hand, PC42 sets up a high-level framework under which a landfill proposal could apply for a resource consent. However, the transport reports for the resource consent application do provide the likely transport effects of a potential landfill that could be consented under the precinct.

The following provides a summary of the methodology, issues and conclusions reached by the applicant in the ITA and associated Clause 23 and Section 92 Responses.

TRIP GENERATION

It is stated in the ITA that,

- In 2028, it is estimated that there will be a peak of 520 waste truck movements per day (inclusive of inbound and outbound directions of travel) spread over any 24-hour period, of which 30 waste truck movements are anticipated to occur during the AM peak hour. Meanwhile, in the PM peak, a further 30 waste truck movements are anticipated.
- In 2028, it is estimated that there will be a peak of 220 non-waste movements per day, and a peak intensity of 25 non-waste vehicle movements during the busiest hour of the peak 4-hour periods around work shift changes.
- *In 2028, it is estimated that there will be a total of 740 daily movements, of which 55 vehicle movements are anticipated to occur in each of the peak hours including waste truck and non-waste vehicle movements. This is 55 movements in the AM peak hour and 55 movements in the PM peak hour.*
- *The traffic generated by the site is only expected to represent approximately 3% of the traffic on SH1 in the morning peak hour and 1% in the evening peak hour.*
- *In the peak hour, all waste trucks are considered to arrive from and depart to the south.*
- *In 2060, it is estimated that these truck numbers will be factored up by 56% to reflect a 1.4% growth per annum in waste for the period 2028 – 2060 (to a total of 811 waste truck movements per day).*

I have reviewed the trip generation within the ITA and consider they appropriately represent the anticipated trips associated with ARL

ROUNABOUT DESIGN

It was concluded in the independent Road Safety Audit (RSA) that a roundabout is an appropriate intersection form to cater for safe access to/from the proposed landfill site. I agree that the roundabout is the appropriate form

of intersection and the location is also considered appropriate to be able to achieve a safe design.

ROUNDBOUT MODELLING

For all operation scenarios, the proposed roundabout intersection is anticipated to operate at a 'level of service' (LOS) of A, which indicates free flowing traffic with minor delays at peak times.

The most significant delays predicted by the model indicate 95% queue lengths of up to 88.0m and 183.1m predicted on the southern approach to the intersection in 2026 and 2060 respectively. Such queues correlate to 6-7 second average delay times for through movements in both scenarios.

I have reviewed the traffic modelling and confirm that it is appropriate for the ARL and PPC42.

ROAD SAFETY

It was queried during the Clause 23 and Section 92 process, the impact of the additional heavy vehicle traffic volumes on the road safety along State Highway 1 (SH1) south of the proposed Auckland Regional Landfill (ARL) site. This concern was related to the high proportion of head-on, overtaking and turning crashes that had occurred on SH1 along this section and that more heavy vehicle movements may exacerbate this trend. The applicant provided the following response:

It is noted that this section of SH1 already carries a high heavy vehicle proportion, both during the weekday and on the weekend, with heavy vehicle proportions varying between 8% to 15% in 2019. As discussed previously, the ARL activity is expected to increase heavy vehicle volumes by 12% to 13% in the ARL 2028 operational year, taking the proportion of heavy traffic within the weekend peak four-hour periods to 11% of the total peak traffic volume (i.e. an increase in total heavy vehicles of approximately 1%). It is acknowledged that the increase in heavy vehicles will have some impact on traffic flows and speeds, however, the provision of various passing and slow lanes as currently exist (in part) and as being upgraded within the current NZTA safety improvements through the Dome Valley, will assist in the mitigation of any negative effects additional vehicles may have compared to the existing environment. It is also noted that the projected volumes and proportions of heavy traffic carried along the highway while giving rise to additional traffic flows along the highway are not greatly inconsistent with other periods of heavy traffic movements at other time of the week.

The NZTA Dome Valley Safety improvements being undertaken within the Safer Networks Programme will enhance the consistency of lower travel speed expectations and enhance the safety of any overtaking manoeuvres being undertaken.

Work involves installing flexible median safety barriers and replacing the northbound and southbound passing lanes at the top of the Dome Valley with a wider shoulder, allowing slow vehicles space to pull over. These improvements are expected to be completed well in advance of the construction of the ARL access roundabout and other works for the ARL project, and are expected to positively address the high proportion of overtaking crashes and provide a more consistent speed environment. It is noted

that all works on SH1 including grades and geometry will be subject to the express approval of NZTA and accordingly, these design matters will be addressed during the consent application.

I have reviewed the road safety commentary within the ITA and the NZTA Dome Valley Safety Improvements sufficiently address any road safety concerns relating to the ARL and PPC42.

CONSTRUCTION EFFECTS

It is stated in the ITA,

...a total of 72 heavy vehicle movements per day and 200 light vehicle movements per day visiting the site. During the busiest hour of the day there could be approximately 20% of the daily number of traffic movements representing approximately 14 movements per hour of heavy traffic and approximately 40 movements per hour of light traffic... It is considered that 90% of light and heavy vehicle trips generated during construction will originate from south of the ARL site... As is typical for most construction related activities, the majority of vehicle trips are considered to be inbound during the morning peak and the majority of vehicle trips will be outbound in the evening peak.

I have reviewed the SIDRA traffic modelling using the above movement quantities, and they show little to no impact on through movements in each direction on SH1 (0-1.4 second average delay time). For vehicles looking to access Crowther Road from southern approach on SH1, the average wait time is estimated to reach 10 seconds in the morning peak and 20 seconds in the evening peak. Right-turn movements out of Crowther Road onto SH1 northbound have a LOS D, with an average wait time of 33 seconds in the evening peak hour.

As a result of the modelling, the ITA states that,

the current layout of the Crowther Road access with SH1 is not proposed to change given that it will only be used for the short duration that the primary site access via Landfill Access Road is being constructed... there are no operational reasons to require an upgrade of this intersection. There is clear sight distance of over 200m on the northbound approach to the intersection which will allow drivers to react to a right turning vehicle within the carriageway. The NZTA safety improvements along SH1 are expected to be completed by 2021 in this area which will further improve the area's road safety. The widened centreline along with the existing wide sealed shoulder allows for a through moving vehicle to pass a vehicle waiting to turn right into the site.

In the ITA it is recommended that prior to commencement of site establishment and construction activities that WMNZ prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of NZTA. A draft CTMP has been prepared by Stantec and I have reviewed this and agree with the general provisions of the draft CTMP comprising:

- The upgrade of Crowther Road to incorporate a right turn bay – note that this is contrary to the text within the ITA.
- The use of temporary traffic management such as Stop/Go for the safe movement of oversize vehicles

- The provision of 'blackout' periods for school bus pick up 7:45am to 8:25am and drop off in the afternoon 3:05pm to 4:10pm. Large vehicle longer than 10m would not be allowed to use the Crowther Road intersection.
- The provision of 'blackout' periods for the busier holiday periods.

I have reviewed the draft CTMP and consider that this will be an appropriate means to manage traffic effects for the construction related truck movements.

4.0 SUBMISSIONS

Private Plan Change 42 was publicly notified on 26th March 2020. Further submissions closed on 3 September 2020.

Fifty-five (55) of the total received submissions raised transport-related concerns. The key themes of concern raised by the submitters included:

- Traffic volume and congestion
- Road safety
- Alternative transport modes
- Road maintenance
- Traffic movement projections
- Restricting private access
- Travel costs

My responses to those concerns are provided below.

TABLE 1. ASSESSMENT OF PUBLIC SUBMISSIONS

TRANSPORT THEME	SUBMITTER ID	OUTLINE OF CONCERNS RAISED	ITA ASSESSMENT FROM WMNZ	GARY BLACK COMMENT
Opposition to PC42 due to Traffic Volume/ Congestion	#ID ¹	<p>Nearly all submitters highlighted the traffic congestion issue on the Dome Valley section of SH1 (between Kaipara Flats Road and Wayby Valley Road) and the concern that increased heavy vehicle movements related to the landfill activity will exacerbate this issue.</p> <p>Submitter #410 states that <i>We have traffic problems continually and adding the large number of daily rubbish trucks would add to it greatly. Currently all freight to and from Northland is carried by road and the additional will put too much pressure on the roads and motorists.</i></p> <p>Submitter #116 states that <i>Whilst the intention of the Precinct is supported it does not appropriately capture traffic effects. Chapter E27 will not enable proper consideration of traffic effects on the wider network. In any event Chapter E27 provides for activities that exceed the specified trip generation standards as a Restricted Discretionary activity and E27.6.1(2) enables exclusion of assessment of trip generation effects if the provisions i.e. the Proposed Precinct provisions are approved on the basis of an Integrated Transport Assessment (ITA) and the effects are the same or similar in character, intensity and scale to those identified in the ITA.</i></p>	<p>Trip generation is summarised in Section 3 of this report, based on information provided in the ITA and Clause 23/Section 92 responses.</p> <p>It is outlined in the ITA, the ARL would generate 520 waste truck daily movements by 2028 and 811 waste truck daily movements by 2060.</p>	<p>I have calculated the increase traffic from 2019 to 2028, factored by 3% compounded traffic growth identified in the Stantec Integrated Transport Assessment. In 2019 the Average Annual Daily Traffic recorded by NZTA was 14,877, with 9% heavy commercial vehicles. This equates to an estimated traffic of 19,400 and 1,748 heavy commercial vehicles in 2028 based on existing NZTA traffic data. The additional 520 waste truck movements per day is an increase of 29.7% in truck movements on SH1 (in the Dome Valley section between Kaipara Flats Road and Wayby Valley Road).</p> <p>While this is a significant increase of heavy vehicles on SH1, the increase in total traffic is an average of 2.7% from waste truck movements. Allowing for non-waste vehicle movements accessing the landfill, the total increase in traffic on SH1 is 3.8% over a 24-hour period. In the peak periods, I have calculated the waste truck and non-waste vehicle movements result in an increase in 5% and 3.1% in traffic during the AM and PM peak hour traffic in 2028. Peak hour trips associated with the landfill are 55 vehicles per hours (Table 5-2 of the ITA) and baseline trips are 1097 in the AM and 1747 in the PM (Table 2-1 of the ITA). I have calculated the increase in waste truck movements to be 2.7% and 1.7% in the AM and PM. Note that the ITA advises 3.1% and 1% increase in waste truck related traffic movements.</p> <p>I consider these increase in traffic are acceptable as there is sufficient traffic capacity along SH1 to accommodate this increase in traffic as the existing SH1 has a link capacity of 1,500 vehicles per hour per lane. Additionally, the proposal to access the landfill directly off the State Highway via the new roundabout is appropriate, as waste truck trips will predominantly originate from the south access the landfill via the P2WW project and the existing SH1 along Dome Valley.</p>
Opposition to PC42 due to Road Safety issues.	#ID ²	<p>Many submitters highlighted the existing crash record on the Dome Valley section of SH1 (between Kaipara Flats Road and Wayby Valley Road) and the potential for increased heavy vehicle movements to exacerbate safety issues:</p> <ul style="list-style-type: none"> <i>I am concerned about the impact on the community's ability to enjoy the environment with a significant increase in heavy traffic...The addition of 300-500 rubbish trucks a day in the Dome Valley will amplify what is already dangerous and stressful travel experience for the local community (Submitter #126).</i> <i>On an already highly congested road with a high crash rate – insufficient condition for heavy transport. (Submitter #190)</i> <p>Submitter #124 states <i>the proposal sees an increase of 44% in the heavy vehicle traffic in the Dome Valley section of SH1 which already has serious safety implications. Safety savings from these [NZTA] improvements is likely to be totally overwhelmed by the increase in heavy traffic.</i></p>	<p>Section 3 of this report discusses the road safety concerns and the responses provided by the client in the ITA and the Clause 23 and Section 92 Responses.</p> <p>Overall, it is concluded in the ITA that the NZTA safety improvements will improve road safety through the Dome Valley section of SH1, and that because the</p>	<p>I agree with those conclusions made in the ITA and the Clause 23 and Section 92 Responses. The proposed NZTA safety improvements along the Dome Valley will improve road safety along the corridor and the effects of landfill related traffic are unlikely to adversely affect the road safety along the corridor. The Dome Valley safety improvements also include wider shoulders on the uphill rise to summit at Dome Valley. This will allow heavy trucks including waste trucks to travel within the wide shoulder and allow faster vehicles to pass these trucks and remain within the traffic lane.</p> <p>I understand that the SH1/Kaipara Flats Road/Goatley Road Intersection will be improved as part of the P2Wk project. While I have not seen any plans for this intersection, I expect that the operational and safety concerns of the intersection would have been considered and addressed within the design. Additionally, as the waste trucks will be travelling northbound and southbound through the intersection as a part of the priority flow of traffic, I consider that the intersection would not be</p>

¹ Submitters who raised traffic volume/congestion concerns listed by submitter number: 6 7 8 13 15 20 21 23 24 35 45 56 66 72 74 76 82 89 95 107 108 111 113 116 117 124 126 128 132 134 138 141 144 146 149 157 159 168 182 189 190 191 192 229 233 234 302 349 395 396 399 400 401 407 410

² Submitters who raised road safety concerns listed by submitter number: 6 7 8 13 15 20 21 23 24 35 45 56 66 72 74 76 82 89 95 107 108 111 113 116 117 124 126 128 132 134 138 141 144 146 149 157 168 182 189 190 191 192 229 233 234 302 349 353 395 396 399 400 401 407 410

TABLE 1. ASSESSMENT OF PUBLIC SUBMISSIONS

TRANSPORT THEME	SUBMITTER ID	OUTLINE OF CONCERNS RAISED	ITA ASSESSMENT FROM WMNZ	GARY BLACK COMMENT
		<p>Submission #116 and #117 sights particular concern with the SH1/Kaipara Flats Road/Goatley Road intersection:</p> <p><i>The Stantec January 2020 response notes that the proposed activity is expected to increase heavy vehicle volumes by 12% to 13% in the 2028 operational year. The Goatley Road / Kaipara Flats Road / State Highway 1 intersection is already identified to have safety and functioning issues. The additional traffic arising from the proposed activity will have adverse effects on this intersection that will require avoidance and / or mitigation. The submitter is aware of the NZTA safety improvements proposed through Dome Valley but is not aware that these upgrades target improvements to this intersection.</i></p> <p><i>In response to above submission #116 and #117, NZTA through Further Submission #05, state that they oppose (in part) these submissions and further state 'NZTA are not entirely clear what changes to the Plan Change provisions the submitters are seeking' but that NZTA 'wish to be involved in any transport issues relating to the Plan Change provisions to ensure that any amendments to the provisions adequately address effects on the transportation network.'</i></p>	<p>increase in heavy vehicle trips is insignificant, this will not exacerbate existing safety issues.</p> <p>Neither the ITA nor the Clause 23 or Section 92 Responses specifically address the SH1/Kaipara Flats Road/Goatley Road intersection.</p>	<p>adversely affected by the additional traffic associated with the landfill when considering the safety of the intersection.</p> <p>Further Submission #05 by NZTA state they 'oppose (in part)' submissions #116 and #117. NZTA continue support the provisions of the plan change. As stated above the, I believe the intersection would not be adversely affected by the waste trucks and I agree with NZTA's position.</p> <p>NZTA is the road controlling authority for SH1 and will be involved in any transport related aspects associated with the plan change that involves the State Highway.</p>
Opposition to PC42 due to the lack of consideration of Alternative Transport Methods	#20 #124 #399	<p>Some submitters identified the lack of consideration for alternative transport methods for waste transport.</p> <p><i>Submitter #124 states that the alternative of Waste by Rail is dismissed without any due consideration...The reported discussions with KiwiRail, refer AEE Appendix 12.7, are not serious discussion of the rail freight alternative. A meaningful discussion must now be held.</i></p>	<p>It is stated briefly in the ITA that <i>the North Auckland Railway Line is located approximately 2.5km west of the site and west of SH1.</i></p>	<p>I agree that the use of alternative transport methods has not been covered adequately.</p> <p>It is my opinion that the use of electric vehicles for the movement of waste to the site is not yet technically feasible however could be technically feasible by 2028. I believe the haulage of waste and operational activities within the landfill would naturally move to electric vehicles when economically viable.</p> <p>However, waste by rail may offer a viable alternative considering the main railway line passes close to State highway to the south of Wellsford, approximately 2.5km west of the site and continues to the travel through Wellsford to the east of the town centre past the Wellsford Train Station. This would require a separate spur or branch line adding to the railway land adjacent to the Wellsford Train Station. However, this would require trucks to travel through Wellford via Centennial Park Road and SH1 to access the landfill. Alternatively, a new spur facility to the south of Wellsford could be provided to remove truck movements from Wellsford, however this would likely have to be located within private property.</p> <p>A facility would also be required in Auckland for the loading of waste onto trains and a suitable location would have to be found within the existing railway network. From a traffic perspective, this should probably be accessed off an arterial road designed for heavy commercial vehicles, such as an industrial area, with sufficient traffic capacity to enable safe access and egress to the loading facility.</p> <p>Site precinct provision we are recommending are:</p> <p><i>I617.2 Objectives [rp/dp] -The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.</i></p> <p><i>I617.3 Policies [rp/dp] – The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste.</i></p>

TABLE 1. ASSESSMENT OF PUBLIC SUBMISSIONS

TRANSPORT THEME	SUBMITTER ID	OUTLINE OF CONCERNS RAISED	ITA ASSESSMENT FROM WMNZ	GARY BLACK COMMENT
Opposition to PC42 due to Road Maintenance issues	#396 #FS01	<p>Submitter #396 expresses concern that there has been no investment in road improvements to cater for projected population, let alone the additional movements associated with the landfill activity.</p> <p>Submitter #FS01 expressed concern that <i>the land in the Dome continuously moves, State highway 1 is slowly moving east into Springhill land and NZTA say they can't stop it...</i></p>	It is assumed in the ITA that the road safety upgrades undertaken by NZTA through Dome Valley will suffice for the operational life of the landfill.	<p>NZTA are responsible for maintaining their roads and therefore would undertake any maintenance deemed necessary. Additionally, the Heavy Commercial Vehicles are subject to Road User Charges which would go some way to the cost of additional maintenance as a result of the landfill trucks. There also the difficulty of attributing the extent of any damage to the roads because of the additional landfill trucks on SH1.</p> <p>I consider that additional road maintenance costs should not be considered from a traffic perspective for this plan change when considering the operational activities of the landfill.</p>
Opposition to PC42 due to Traffic Movement Projections	#111 #149	<p>With regard to assumption made in the ITA that waste truck movements to and from the north of the proposed site will be similar to those of the existing Redvale Landfill, Submitter #149 highlights that <i>the potential for waste operations in the Mangawhai area to travel to Wayby Valley Road is also a reality. Therefore, closer scrutiny should be given as the perimeters around this, based on the assumption that the 'small northern population base' will remain. It is not destined to stay small going forward.</i></p> <p>Similarly, Submitter #111 highlights the lack of information on collection catchments and specific transport routes for the proposed landfill and raises concern that waste could come from anywhere in the Auckland region.</p>	In relation to the concern raised by Submitter #149 additional truck movements north of the ARL site through Wellsford are comparatively insignificant compared to those coming from Auckland (south), equating to up to 2 truck movements a day, consistent with current volumes associated with Redvale Landfill (discussed further in Section 3 of this report).	<p>The ITA identifies that up to 2 truck movements per day will operate from the north. As SH1 through Wellsford is the primary route for the movement of heavy commercial vehicles, the truck movements from the north associated with the landfill are negligible given that the predicted heavy commercial vehicles in 2028 is expected to be 1,700 truck movements per day through Wellsford.</p> <p>I have looked at possibly alternative routes to access the landfill from the Auckland Region. The primary route is SH1 to the north, which will be dual carriageway from Auckland to Warkworth after the completion of the P2Wk project. These roads provide a fast and safer corridor for trucks to travel to access the landfill site. The exception is the Dome Valley section of SH1 which I have discussed earlier. The alternative route would be SH16 via Helensville, which will be a longer route and slower and is therefore unlikely to be used for day to day landfill truck movements.</p> <p>I am of the view that the traffic movement projections are correctly assessed within the ITA.</p>
Opposition to PC42 due to restricting Private Access	#134 #138	<p>Submitter #138 states that <i>Closing of unformed legal roads removes them from public ownership and could compromise continued public access in the future.</i></p> <p>Similarly, submitter #134 notes that there are <i>legal roads which cross, but do not form part of the applicant's landholdings. There are also some private roads.</i> This submitter has requested the additional objective, policy and special information requirement are made to amend the Precinct provisions:</p> <p>Objective – The Auckland Regional Landfill is designed and operated so as to avoid, remedy or mitigate adverse effects on the transport network.</p> <p>Policy – Require any development to provide access and manage operations so as to support safe and efficient movement of vehicles, in particular heavy vehicles, accessing the site to or from the public road network.</p>		<p>I have reviewed the feedback from Auckland Transport regarding the stopping of paper roads under Local Government Act 1974. They have requested:</p> <p><i>Attach a condition or advice note to any resource consent granted noting that road stopping needs to be completed and an unconditional agreement to purchase the legal road in place before any landfill operations, including earthworks preparations, can commence in Valley 1.</i></p> <p>With a further request:</p> <p><i>Seek additional information from the applicant about the extent to which activities outside Valley 1, but otherwise within the applicant's landholdings, are expected to occupy or use legal roads.</i></p> <p><i>Attach a condition or advice note to any resource consent granted noting landfill operations need to avoid occupying legal roads.</i></p>

TABLE 1. ASSESSMENT OF PUBLIC SUBMISSIONS

TRANSPORT THEME	SUBMITTER ID	OUTLINE OF CONCERNS RAISED	ITA ASSESSMENT FROM WMNZ	GARY BLACK COMMENT
		<i>Special Information Requirement – Information about how the proposed use or occupation of any legal roads within the precinct, including any unformed or partly formed roads will be managed. Where any legal roads are affected, information about consultation and/or applications for road stopping undertaken with Auckland Transport, including any recommendations or decisions from Auckland Transport.</i>		As there is the legal framework for the stopping of road under the Local Government Act 1974 and the paper roads would be purchased from Auckland Transport, I believe the feedback could be addressed through the Resource Consent process
Opposition to PC42 due to Travel Costs		Some submitters expressed concern with the travel costs associated with waste truck movements to and from the proposed ARL site.	Travel cost has not been covered in the ITA.	I consider travel cost to be a commercial consideration for WMNZ and no further commentary is required.

5.0 STRATEGIC ASSESSMENT

In this section I provide brief comment on the strategic alignment of what is enabled under the proposed plan change, with reference to objectives and policy of key transport plans and policies.

I have recommended additional objective, policy and standards, of which addresses the adverse effects of traffic generated enabled by the plan change. These are detailed in Section 7.0.

5.1 AUCKLAND UNITARY PLAN OPERATIVE IN PART (AUP OP), SECTION E27 - TRANSPORT

Objective E27.2. (1) of the AUP (OP) states,

- (1) *Land use and all modes of transport are integrated in a manner that enables:*
- (a) *the benefits of an integrated transport network to be realised; and*
 - (b) *the adverse effects of traffic generation on the transport network to be managed.*

The precinct provisions provide no policy and/or standard to enable the adverse effects of traffic generation related to the landfill activity to be appropriately managed. However, it is acknowledged the objectives above will apply and need to be considered at the resource consent application stage.

As highlighted in the submissions, the waste truck traffic generation enabled by PPC42 and the potential adverse effects on road safety are cause for concern. The crash history on SH1 (between Wayby Road and Constable Road indicates that there are inherent road safety issues on this section of the SH1 and the NZTA Dome Valley Safety Improvements should help address these safety concerns. However, an unlimited increase in waste truck movements allowed by PPC42 does not sufficiently manage the potential adverse effects of traffic generated by this activity.

It should be noted that under the AUP (OP) E27- Transport, the landfill activity would likely not require traffic assessment as the requirements of E27.6.1 would not be triggered as the ARL is a discretionary activity within the precinct text.

I therefore recommend that waste truck movements be limited to 1,000 movements per day. This can be addressed through 1627.6(2) Discretionary Standards and the following recommended standard; *‘The waste truck movements shall not exceed 1,000 truck movements per days’.*

5.2 AUCKLAND REGIONAL POLICY STATEMENT, CHAPTER 4 - TRANSPORT

Objective 2.(iii) of the Auckland Regional Policy Statement³ states,

3

www.aucklandcity.govt.nz/council/documents/regionalplans/aucklandcouncilregionalpolicystatement/ACRPS%20Chapter%204.pdf

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To avoid, remedy, or mitigate the adverse effects of transport on the environment and, in particular...the adverse effects of the transport system on community well-being and amenity.

The plan change allows for an unlimited increase in heavy vehicle traffic volume and therefore the landfill activity is not considered to remedy or mitigate adverse effects of the transportation of waste.

Policy 4.4.7.2 states *'The efficiency of congested transport Corridors will be increased by: (i) encouraging increases in person-carrying capacity (i.e., by supporting public transport, carpooling and high occupancy vehicles); (ii) encouraging increases in freight carrying capacity (i.e., by supporting consolidation of loads and rail freight)...*'

Policy 4.4.10.4 states *'Take all reasonable steps to avoid, remedy or mitigate the adverse health effects of transport.'*

I am of a view that the plan change precinct provisions do not address waste transportation health effects. The relevant supporting plan change documents (AEE and ITA) assume waste transportation will occur via trucks and do not consider the option of waste transportation by rail or other means. Therefore, PPC42 is inconsistent with this Auckland Regional Policy Statement policy. Waste transportation by rail also mitigate adverse health effects of traffic generation on the transport network by reallocating additional truck movements from the road network to rail. However, I note that there would be an increase in waste truck movements at a waste loading facility within the Auckland region that would be required to load waste onto trains.

5.3 GOVERNMENT POLICY STATEMENT (GPS) ON LAND TRANSPORT 2018/19

The GPS on Land Transport places the highest level of emphasis on road safety. The GPS Safety Objective is *'a land transport system that is a safe system, free of death and serious injury.'*

The GPS reflects a significant increase in the level of ambition for delivering a land transport system free of death and serious injury and signals a greater focus on investing in safety improvements on high risk state highways and local roads across the network, including speed management and primary safe system treatments.

6.0 ASSESSMENT OF EFFECTS

Based on my review of the ITA, I conclude that:

- The increase in vehicle movements consists of 5% and 3.1% in the morning and evening peak hours respectively (note that the ITA advises 3% and 1% increase for waste truck movements). It is considered the level of the vehicle trips generation by a potential landfill within the precinct can be accommodated within the road network without significant effects on the road network efficiency.

- The effects of the waste trucks generation on SH1 at the proposed roundabout providing access the ARL has been assessed as acceptable, with delays of less than 10 seconds and peak times.
- The effects of the additional construction traffic at Crowther Road during construction has been assessed and can be managed.
- The expected landfill related flows in 2028 does not exceed the theoretical capacity of 1,500 vehicles per day per lane.
- The crash record on SH1 south of the proposed precinct site shows inherent safety issues where head-on, overtaking and turning crashes are common. NZTA have identified this stretch of road for safety improvements including centreline widening, shoulder widening and passing bays. The proposed construction work for the landfill is planned to occur after these safety improvements have been implemented. The estimated landfill vehicle movements upon operation are not considered to exacerbate existing road safety issues, due to the relative insignificance of such trip generation of 5% and 3.1%.
- The provision of an NZTA and/or Auckland Council approved Construction Traffic Management Plan (CTMP) is an appropriate mechanism to ensure construction has a minimum impact on the safety and efficiency of the adjacent transport network. I recommend the precinct provisions include this as a Special information requirement for landfill applications.
- It is appropriate that the proposed landfill activity in the proposed precinct will still need comply with the AUP (OP) transport standards (Chapter E27).

7.0 CONCLUSIONS

Based on my review of the precinct provisions, I conclude that:

- The proposed plan change does not align with the strategic objectives of Auckland Council, or at the national level. The applicant does not provide assessment of the proposed plan change against transport related regional or national plans and policies. I have provided a brief assessment of the proposed plan change against such relevant strategic policy documents.
- The ITA provides no consideration of alternatives to road transport for transportation of waste to the landfill site. In particular, there is no feasibility assessment or investigation into the option of waste by rail.
- There is no waste truck trip generation limit included in the precinct provisions.

I consider the additions to the precinct provisions detailed below in Section 8.0 suit to provide consistency with the strategic direction of the city and address the specific issues raised above.

8.0 RECOMMENDATIONS

The applicant has adequately assessed the effects of PPC42 change on the transport environment.

Overall, I do not oppose the proposed precinct based on transport reasons. However, I do recommend some modifications to the precinct provisions. These are:

- I617.2 Objectives [rp/dp] -The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.
- I617.3 Policies [rp/dp] – The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste.
- New Discretionary Standard - The waste truck movements shall not exceed 1,000 truck movements per day.
- I617.9 Special information requirements – Any application under the precinct provisions must be accompanied by a Construction Traffic Management Plan.

Yours sincerely,



Gary Black
Principal Transportation Engineer
Harrison Grierson

Include Attachments:

- Precinct wording with recommended amendments

RECOMMENDED PRECINCT WORDING

I617.2 Objectives

7. The Auckland Regional Landfill is designed and operated so that the adverse health effects of transporting waste are avoided, remedied or mitigated.

I617.3 Policies

7. The means by which transportation of waste occurs to and from the Auckland Regional Landfill shall minimise trips by road and evaluate other options for the transport of waste.

I617.6(2) Discretionary Standards

6. The waste truck movements shall not exceed 1,000 truck movements per day.

I617.9. Special information requirements

I617.9.1 New Landfills

- (1) Any application for a new landfill under rules I617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

The Landfill Management Plan must include (but is not limited to) the following documents:

OPERATIONS

INITIAL CONSTRUCTION

- Construction Traffic Management Plan.

Memo

7/09/2020

To: Ryan Bradley
cc: Paul Klinac (ETS), Warwick Pascoe
From: Ross Roberts
Subject: Geotechnical Assessment – Dome Valley Auckland Regional Landfill PPC
Project: GEO00257 - Dome Valley Auckland Landfill RC and PPC
Status: Final
Document ID: AKLCGEO-1790012875-803

Version: 2

1 Introduction

This memo presents the findings of my review of Private Plan Change 42, Auckland Regional Landfill.

1.1 Scope

I have undertaken a review of the PC42 application on behalf of Auckland Council in relation to geotechnical effects. This memo is one of several reports that have been prepared on a range of technical topics relevant to the consent application. Groundwater and contamination are dealt with in other reports. A separate memo (ref AKLCGEO-1790012875-840) covers the resource consents that are being processed alongside Private Plan Change 42.

For this memo I have reviewed site specific geotechnical information and analysis made available by the applicant, information in the public domain, and undertook a site inspection on 6 March 2020 with a representative of the applicant.

1.2 Author

I am Auckland Council's Geotechnical and Geological Practice Lead. I have nearly twenty years' experience as an engineering geologist. I have a bachelor's degree in geology from the University of Edinburgh and a masters' degree in Engineering Geology from the University of Newcastle. I am registered as a Professional Engineering Geologist (PEngGeol ref 1013605) with Engineering New Zealand and as a Chartered Geologist (CGeol ref 1008376) with the Geological Society of London. I am chair of the New Zealand Geotechnical Society, and have lectured at the University of Auckland and UNITEC on geotechnical investigations and natural hazards. I am the New Zealand representative on the International Society for Soil Mechanics and Geotechnical Engineering Technical Committee 208 on Slope Stability.

1.3 Purpose and limitations

This memo is provided expressly for advising Auckland Council Plans & Places in regard to Private Plan Change 42. It may also be used by others in preparing evidence for the related hearing. It is not intended to be used or copied in whole or part for other audiences or purposes without the prior approval of Auckland Council Engineering and Technical Services.

2 References

In preparing this memo I have considered the following documents:

- Tonkin + Taylor. (August 2020). Auckland Regional Landfill Geotechnical Addendum Report.
- Tonkin + Taylor. (May 2019). Auckland Regional Landfill Assessment of Environmental Effects.
- Tonkin + Taylor. (May 2019). Auckland Regional Landfill Geotechnical Factual Report.
- Tonkin + Taylor. (May 2019). Auckland Regional Landfill Geotechnical Interpretive Report.
- Tonkin + Taylor. (May 2019). Auckland Regional Landfill Probabilistic Seismic Hazard Assessment.

3 Description of the proposal

Waste Management NZ Ltd (WMNZ) has acquired approximately 1020 ha of land in the Wayby Valley area, north of Auckland. WMNZ is proposing to develop a municipal solid waste landfill on part of this land. The Auckland Regional Landfill will provide a new solid waste management and disposal facility to replace the Redvale Landfill which currently provides for disposal of approximately 50% of Auckland's solid waste.

4 Site area

The proposed landfill is adjacent to the Wayby Valley to the north of State Highway 1 (SH1), ~13 km northwest of Warkworth and ~6 km south-east of Wellsford. There are a number of valleys present within the WMNZ landholdings. Initially only one valley with a total area of approximately 100 ha has been identified for development for landfilling purposes, named in reports as 'Valley 1'

The project footprint comprises steep and undulating terrain, predominantly vegetated with pine forest, with areas of dense native bush, and localised areas of gorse and low-growing vegetation.

5 Key issues

The geotechnical issues I consider to be important in regard to the proposal are:

- Land stability in steep terrain
- Availability of suitable local sources of capping and lining material

6 Applicant's assessment

6.1 Hydrogeology

The applicant notes in the Assessment of Environmental Effects report that, *"The bedrock and residual soils generally have low permeability, which should provide good natural containment. The site is not close to the coast, or any active faults and does not overlie Karst geology or high permeability sand and gravel ... Additional engineering controls will need to be provided as part of the landfill design to provide additional containment and protection to the surrounding environment where the WMNZ landholdings are underlain by fractured rock.."*

Because this aspect will be addressed in the report by the groundwater specialist I will not address it further in this memo.

6.2 Slope stability

The applicant reports in the Assessment of Environmental Effects report that, *"Some pockets of historic land instability have been identified within the proposed precinct boundary, including a couple of potential historical areas of landslips within Sub Precinct A. This will need to be assessed and managed during detailed design and consenting of the landfill when applied for under the precinct provisions. The Geotechnical Assessment concludes that this risk can be appropriately managed through design and construction measures."*

In the Geotechnical Interpretative Report this is expanded upon as follows, *"We consider that the primary slope instability hazard is likely to be associated with instability associated with groundwater seepage at the soil and rock interface (item ii above) Failure mechanisms in the proposed Pakiri Formation rock cuttings are likely to involve failure on preexisting defects in the rock (joints and bedding) that form unstable sliding blocks and wedges. Probable historic landslide features are evident in the vicinity of BH13 on the access road alignment and below BH1 in the landfill footprint (Figures 5.1 and 5.2 below). These appear to be translational landslides located at, or in close proximity, to the soil / rock interface and in association with groundwater seepage. We have not observed any evidence of more deep seated slope instability within the Pakiri Formation bedrock. Clay seams and some polished defects were observed in boreholes BH12 and BH13 at, or near, the soil bedrock interface."*

These findings are supported in the later Geotechnical Addendum Report, which incorporates findings from more detailed ground investigations.

An assessment of the calculated factors of safety for a representative sample of slopes was presented by the applicant in the Geotechnical Interpretive Report section 7.2.2.

6.3 Material availability

The applicant reports in the Assessment of Environmental Effects report that, *“The rock and soil materials available on site are generally suitable for liner construction and landfill operation.”*

The Geotechnical Interpretive Report includes further details summarising testing undertaken on proposed material for the clay liner and cap. This report noted, *“The results from these tests indicate that the existing site soils derived from weathering of Pakiri Formation are probably suitable for use as clay liner material but that there are potential risks in terms of compaction and erodibility. It is likely that the allophanic soils will be suitable for clay liner construction, perhaps with mixing with other soils. Additional investigations have been undertaken within the Western Block in order to locate additional clay liner and cap material. The investigations encountered silt/clay material 1.4 to 3.5 m thick overlying Northland Allochthon material, which we anticipate will be suitable for liner and cap construction. To specifically assess how these materials will behave as liner and cap materials it is recommended that further sampling and testing be undertaken at the time of detailed design.”*

6.4 Seismic risk

The applicant reports in the Assessment of Environmental Effects report that, *“The study concluded that the proposed Auckland Regional Landfill site is in an area of relatively low seismicity compared to the rest of New Zealand. There are no active faults present within 20 km of the project site according to the New Zealand Active Faults Database, and no significant fault zones were encountered in the boreholes or other geotechnical investigations. The site specific study predicted lower levels of shaking during a hypothetical earthquake event than specified in the relevant design standards for the site. As the landfill will be required to meet the relevant standards, then the landfill seismic design standards are considered to be conservative. By designing to the relevant seismic design standards, the adverse effects of seismic risk are expected to be minimal and within accepted engineering standards for the proposed activity.”*

7 Submissions

A number of submissions raised geological unsuitability as a concern. Many of these used very similar language, typified by submission 108

The proposed site consists of fractured upthrust sandstone and mudstone layers, topped with reactive clay. The cracking and swelling clay causes gradual ground movement or sudden slips. Water flows carve intermittent underground streams, forming tomos and springs. These streams will

often disappear down cracks in the uplifted bedrock thus contributing to the underground aquifers. This combination also results in high risk of slips on the surface.

In my conclusions I have addressed the slope stability element of this submission. The groundwater element will be covered in the report by the groundwater specialist.

In addition, many submissions noted the high rainfall experienced by the area, such as submission 230. These submissions can be summarised with the wording below, also taken from submission 108:

The elevated site is exposed to north – north westerly winds, highly localised rain, lightning and thunderstorms. The Dome Valley area experiences high rainfall, normally in the winter months, but is also prone to summer cyclones predominantly from the north east. These high rains cause extreme flood events and large slips in the area, particularly where earthworks such as a landfill site would include.

In my conclusions I comment upon the slope stability element of this submission. I have not specifically commented on the level of rainfall experienced as a quantitative assessment of rainfall is outside my area of expertise, but I concur that, given the terrain, the area is likely to be exposed to higher rainfall than surrounding areas.

8 Assessment of geotechnical effects

8.1 Slope stability

It is apparent from the evidence presented, from the site walkover, and from other available data sources including aerial photography that the proposed site is subject to geotechnical instability. The available evidence strongly suggests that this instability is limited to the surficial soils and does not extend into the bedrock. The findings of the geophysical investigation in BH-15 are particularly relevant, demonstrating that bedding (which is a common sliding surface in the region) dips gently to the south and east, which means that sliding on these surfaces is unlikely as it would have to involve an element of uphill movement. This is supported by the visible expression of the instability, which is consistent with relatively shallow movement.

This instability has occurred under the current climatic conditions, which submitters have noted includes high rainfall.

Shallow instability has the potential to be an issue during construction, when excavation into the slopes will steepen some areas. An example of this is shown in the cross section below, which shows the proposed liner level. In some areas the excavation removes the unstable shallow soils entirely, which would be expected to improve stability, while in others it cuts into and steepens these materials, reducing their overall stability.

Auckland Regional Landfill - Geological Model Cross Section C

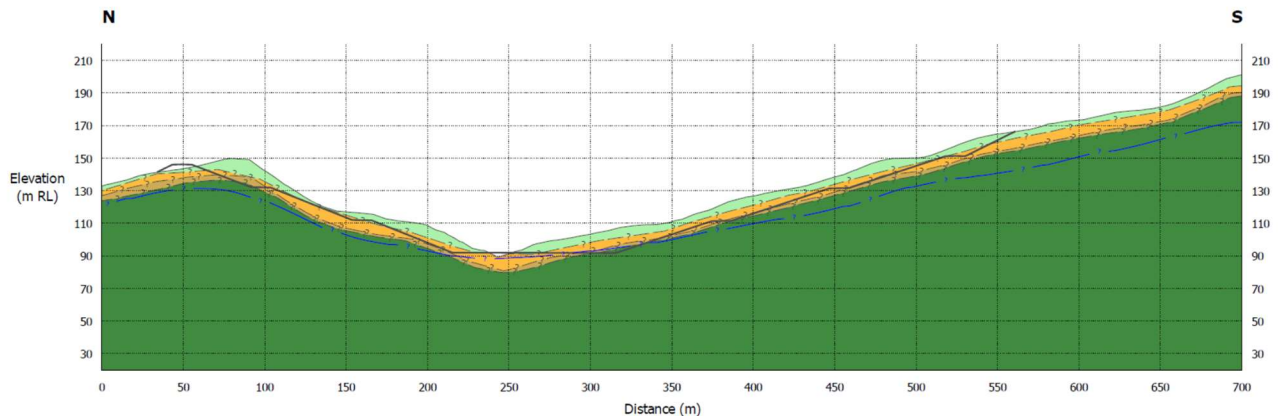


Figure 1: Cross Section C from the Addendum Geotechnical Report, showing the proposed liner level (black line) relative to the potentially unstable surface deposits (pale green and yellow)

In some areas the stability of the shallow material will be reduced. This is an expected condition of civil works in this environment and can be managed effectively during construction. Examples of the types of measures needed to manage this scale of instability are presented in the Geotechnical Addendum Report section 7.3.

As the landfill is progressively filled, the additional mass at the toe of the slopes will, over time, increase the stability of the slopes and would be expected to result in a more stable slope than currently exists. I therefore consider that the reduction in slope stability applies only during the construction of the landfill.

8.2 Material availability

Based on the evidence presented it is likely that the majority of the materials required for constructing the liner subgrade and cap will be available within the site. Because of the relatively limited testing to date there is some risk that additional material may need to be brought to the site if the in-situ material is more variable than predicted.

8.3 Seismic risk

The findings of the Tonkin + Taylor Probabilistic Seismic Hazard Assessment align with my expectations based on experience in the region.

9 Conclusions

9.1 Slope stability

I conclude that slope stability hazards exist on the site but can be managed with conventional geotechnical engineering techniques. The submissions that described slope stability issues correctly identified that these are generally shallow features, and the applicant has presented appropriate measures to manage this risk.

The existing shallow instability has occurred under current high rainfall conditions. Any geotechnical design will need to be based on measured groundwater levels which will, by default, represent the high rainfall that exists at the site. The design should therefore be appropriate to mitigate this risk. Construction of cut and fill slopes is common in areas of high rainfall, and can be managed with suitable controls.

The applicant notes in their Geotechnical Addendum Report that, “*Additional geotechnical investigations, ground modelling and slope stability analyses will be required to support detailed final design of stable engineered and natural slopes, in particular to confirm the extent, depth and ‘activity’ of the existing probable landslide features*”. I concur with this assessment.

9.2 Material availability

I believe that it is likely that most of the fill materials required will be available on site, but that some import of material may be required as the quantity of testing required to confirm this is not likely to be completed until detailed design. I do not consider that this is likely to be a significant effect. The main effects, should material import be required, will be additional traffic movements. It is not possible with the current amount of information available to quantify this.

9.3 Seismic risk

I concur with the applicant that the project area is located in a low seismic area relative to other parts of New Zealand. Using loadings from NZS1170.5 and the Bridge Manual, combined with appropriate factors of safety, would result in a suitably conservative geotechnical design.

10 Recommendations

Based on the evidence presented I see no reason to reject the private plan change from a geotechnical perspective. I do not propose any modifications to the precinct provisions.

11 Quality assurance

Reviewed and approved for release by

Reviewer

Paul Klinac has approved the release of version 2 of this document with the following comments: . This approval flow commenced 07/09/2020 08:47 PM and was completed 08/09/2020 08:24 AM.

This memo is satisfactorily completed to fulfil the objectives of the scope. I have reviewed, and quality checked all information included in this memo

Author

Ross Roberts, Geotechnical & Geological Practice Lead

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8/09/2020 8:45 am

Memo (technical specialist report to contribute towards Council’s section 42A hearing report)

21 September 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Natalie Webster (Pattle Delamore Partners Ltd)

Subject: Private Plan Change – Auckland Regional Landfill – Waste Acceptance Criteria and Environmental Risk Assessment

1.0 Introduction

1.1 I have undertaken a review of the private plan change (PPC) application to create a Proposed Auckland Regional Landfill Precinct (PARLP), on behalf of Auckland Council in relation to waste acceptance criteria and environmental risk.

My name is Natalie Jane Webster. I hold the role of Technical Director – Contaminated Land at Pattle Delamore Partners Ltd (PDP), a role I have held since 2018, prior to which I was an Environmental Scientist and then a Service Leader in the Contaminated Land team at PDP. I am an environmental scientist with 16 years’ experience. I hold Bachelor of Science (Geology), and a Master of Science (Environmental Science) from the University of Auckland, New Zealand. I am a member of Waste Minimisation Institute of New Zealand (WasteMINZ), and the Australian Land and Groundwater Association (ALGA).

I have recent and relevant experience as a contaminated land specialist. I have completed numerous investigations and assessments of contaminated land on sites with varying land uses and including the investigation of a variety of media. This work has included: investigation drilling, obtaining soil, sediment, groundwater, surface water, and ground gas samples; groundwater, surface water, stormwater, and tradewaste monitoring; the assessment of sample analysis results against relevant guideline documents, regulations, and planning instruments; and the production of technical reports. I have been involved in projects which assess the environmental and human health effects which may arise from landfill activities; and in the production of guidance regarding landfill operations, specifically waste acceptance procedures and criteria.

1.2 In writing this memo, I have reviewed the following documents either in whole or in part:

- Auckland Regional Landfill Private Plan Change Request –Assessment of Effects and Section 32 Analysis (T+T July 2019).
- Auckland Regional Landfill Assessment of Environmental Effects (T+T May 2019) and associated supporting Technical Reports.
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 15 November 2019)
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 3 February 2020)
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 4 March 2020)
- Submissions – Online Submission Report – summary of PPC42 submissions, prepared by Auckland Council.

I note that there have been several iterations of the proposed precinct provisions, as these have been revised in response to Clause 23 questions and comments. In writing this memo, I am referring to the latest iteration of the proposed precinct provisions, as provided in the ‘Clause 23 Response:

2.0 Key Issues

1. As presented in the PARLP provisions, the Discretionary Activities at A1, A2, and A3 in the Activity Table I167.4.1, which are for the activity of establishing a ‘New Landfill’ in Sub-precinct A, may be interpreted to allow for an application for a second (or larger) landfill in Sub-precinct A, in addition to the currently proposed landfill (through a related but separate resource consent process).

It is noted that the airspace volume restriction for ‘Existing Landfills’ under the a Restricted Discretionary Standards will prevent an application for a larger landfill beyond the airspace volume restriction. Any such second landfill would be assessed as a Discretionary Activity. As it does not appear to be the intention of the PALRP application to establish or allow for more than one landfill in Sub-precinct A; and doing so would result in an increase in the potential effects (proportional with the increased landfilling area), it is considered that this should be made explicit in the PARLP provisions e.g. a specific declaration that only one landfill will be able to be established in Sub-precinct A.

2. PARLP Objectives (I617.2) do not incorporate an objective(s) to avoid, remedy, mitigate, or offset adverse effects to the underlying and regionally significant potable aquifer. Whilst PARLP Objective No. 4 provides a mandate for rivers, lakes, streams and wetlands to be considered (and it is noted that Policy No. 3(d) requires that adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply are avoided) it is noted that a specific objective has not been included pertaining to protection of groundwater resources. Given the regional importance of this groundwater resource for both municipal, agricultural, and industrial supply it is my opinion that the PARLP should incorporate a specific objective regarding groundwater/aquifer water quality (and quantity), as this is relevant to the protection of human health and ecological receptors.
3. I consider that further amendments to the proposed precinct policies could be made to strengthen Council’s ability to ensure that activities that could result in adverse environmental effects are not able to be consented within the precinct. This is in relation to two specific matters of concern which are further discussed below, being a). Closure and aftercare; and b). Waste acceptance procedures.
 - a. Closure and aftercare: It is acknowledged that wording regarding the requirement for site closure and aftercare planning is included in the assessment criteria for restricted discretionary activities, as a matter of discretion. This was done for both new and established landfills, for the assessment of discharges to air, land, and water. However, it is considered that the importance of appropriate planning for closure, and implementation of aftercare activities, could be better acknowledged by including explicit mention of these aspects within the precinct policies. This would make it abundantly clear that the precinct would not enable the establishment of a landfill if it cannot be demonstrated that closure and aftercare planning have been undertaken (because these aspects are an important part of the ongoing prevention of discharges in the long term).
 - b. Waste acceptance procedures: It is acknowledged that wording specifying waste acceptance procedures as a matter of discretion is included in one of the assessment criteria for restricted discretionary activities. This was done for both new and established landfills, for the assessment of discharges to air, land, and water. However, it is considered that due to the critical importance of waste acceptance procedures in preventing adverse environmental effects, explicit mention of this aspect should be made in the precinct policies. This would be a means of explicitly stating that waste that could

result in discharges which may have an adverse effect on human health or the environment will not be accepted into the landfill.

3.0 Applicant's assessment

The applicant states that the focus of the assessment undertaken in the Assessment of Environmental Effects (AEE) to support the application for a Private Plan Change (PPC) is on the actual or potential environmental effects arising from the PPC, and not on the effects that might arise from the landfill because this will occur as part of the consent application process. On this basis, the PPC assessment focusses on planning implications of the proposed PPC and changes to activity status, and not on the potential for the activities which may be consented to occur within the precinct to result in adverse effects. Accordingly, only limited information has been provided with the PPC application which is specific to waste acceptance and environmental risk. Instead, the application refers to the technical documents provided in support of the resource consent application (BUN60339589).

The information that is provided within the PPC application with respect to waste acceptance and environmental risk is limited to an acknowledgement that leachate generated by degrading waste has the potential to migrate in to, and contaminate groundwater. The application states that potential effects on groundwater quality will be largely avoided by the design and construction of an appropriate landfill lining system which captures the leachate, and through waste acceptance criteria to control the properties and characteristics of the leachate. It is noted that the potential for leachate to impact surface water is not considered by the PPC application, with the assessment of effects on surface water focussed on the requirement to reclaim streams and therefore affect stream habitat. However, the proposed policies and objectives of the PARLP have a strong focus on the avoidance of effects on surface water quality, as discussed further in Section 5.

The applicant notes that there will be no additional effects arising from the PPC that would not have arisen under the AUP as it exists. However, the purpose of the PPC is to recognise and authorise the establishment of infrastructure (a landfill) that is currently non-complying under the existing provisions of the AUP.

4.0 Submissions

A total of 412 submissions have been received in response to the PARLP.

I have reviewed specific submissions relating to waste acceptance and environmental risk, as well as reviewing the submission summaries compiled by Auckland Council.

In relation to matters of environmental risk and waste acceptance, the submitters express a number of concerns which may be summarised as follows:

1. That the precinct will allow the establishment of a landfill and the placement of waste that may result in adverse effects to surface water receptors (streams, the Hoteo River, the Kaipara Harbour), and the ecosystems that those receptors support.
2. That the precinct will allow the establishment of a landfill and the placement of waste that may result in adverse effects to groundwater quality.
3. That the precinct will allow the establishment of a landfill and the placement of waste that will generally degrade what is considered to be a pristine environment.
4. Regulatory Themes:
 - a. The proposal conflicts with the purpose and principals of the RMA, and other policy e.g. (NPSFW);
 - b. The proposal conflicts with the Auckland Unitary Plan (in several instances);
 - c. Use of management plans is not sufficient to provide positive outcomes.

Almost all of the submitters oppose the creation of the PARLP (and the establishment of the landfill), on the grounds summarised above (and including other objections not assessed in this memo).

In order to provide comfort to submitters that the PARLP will not permit an activity that will result in adverse effects to the environment and human health, the precinct provisions would need to clearly state that adverse effects will not be allowed to occur. However, such a statement cannot be made because the precinct provisions acknowledge (correctly) that in some instances adverse effects will occur (e.g. the reclamation of the natural stream course in Valley 1, where the landfill will be located). Thus, the precinct provisions include discussion of mitigation, offsetting, and / or compensation.

The wording of the policies and objectives places primacy on the avoidance of effects. I support this approach and, with the additional amendments proposed, have confidence that the requirement to avoid effects in the first instance is well established in the provisions. However, there is no way that effects to receptors can be completely avoided if a landfill is established within the precinct.

5.0 Assessment of Effects

As noted in Section 4, the precinct provisions as currently proposed (and as notified) have been written with primacy placed on the avoidance of effects. The objectives and policies pertaining to discharges and landfills are generally in line with (e.g. require the same level and scope of effects avoidance) as current objectives and policies in the Auckland Unitary Plan, from Sections E1 and E13 respectively.

However it is noted that the wording of the precinct objectives does not specifically refer to the prevention or mitigation of discharges to groundwater; or to the requirement to protect groundwater quality (whereas specific provisions exist with respect to the avoidance of effects to surface water). Reference is made in Objectives 4 and 6 to preventing adverse effect on streams, lakes and rivers; and in Objective 6 to protecting the mauri of freshwater, but groundwater is not specified as being one of the freshwater receptors that must be protected.

Policy 3 states that discharges of contaminants into water shall avoid, or otherwise minimise adverse effects on the quality of freshwater, and on aquifers 'that provide water for domestic and municipal supply'. This is the only specific mention of the requirement to protect groundwater quality; and then the policy specifically relates to aquifers used for domestic or municipal supply only. Policy 6 requires adverse effects from the construction and operation of ARL on 'freshwater systems' to be avoided, remedied or mitigated generally and to the extent practicable, or otherwise offset / compensated for. 'Freshwater systems' is considered likely to include groundwater aquifers, but this is not specified.

Given that groundwater in the vicinity of the landfill is utilised for domestic purposes, and may be required as a resource in the future; and further, that groundwater discharges in to surface water receptors in the vicinity (i.e. springs), the requirement to protect of groundwater quality should be explicitly and strongly required in the objectives and policies of the PARLP.

Further, and as noted in Section 2 of this report, I consider that amendments to the proposed precinct policies could be made to strengthen Council's ability to ensure that activities that could result in adverse environmental effects are not able to be consented within the precinct. This is in relation to two specific matters of concern which are further discussed below, being a). Closure and aftercare; and b). Waste acceptance procedures.

- a. Closure and aftercare: It is acknowledged that wording regarding the requirement for site closure and aftercare planning is included in the assessment criteria for restricted discretionary activities, as a matter of discretion. This was done for both new and established landfills, for the assessment of discharges to air, land, and water. However, it is considered that the importance of appropriate planning for closure, and implementation of aftercare activities, could be better acknowledged by including explicit mention of these aspects within the precinct policies. This would make it abundantly clear that the precinct would not enable the establishment of a landfill if it cannot be demonstrated that closure and aftercare planning have been undertaken (because these aspects are an important part of the ongoing prevention of discharges in the long term).

- b. Waste acceptance procedures: It is acknowledged that wording specifying waste acceptance procedures as a matter of discretion is included in one of the assessment criteria for restricted discretionary activities. This was done for both new and established landfills, for the assessment of discharges to air, land, and water. However, it is considered that due to the critical importance of waste acceptance procedures in preventing adverse environmental effects, explicit mention of this aspect should be made in the precinct policies. This would be a means of explicitly stating that waste that could result in discharges which may have an adverse effect on human health or the environment will not be accepted into the landfill.

It is noted that as part of the Clause 23 process, the applicant stated the following: *“To make it clear that waste acceptance criteria should form a key consideration for future consenting processes in the precinct, proposed policy 3 has been amended to include “adoption of appropriate waste acceptance criteria informed by up-to-date knowledge of contaminants of concern”* (T&T, ‘Further Clause 23 response: Auckland Regional Landfill – Private Plan Change’, 4 March 2020). The insertion of this wording is supported, but it does not appear in the notified version of the PARLP provisions.

As noted in Section 2 of this report, the Discretionary Activities at A1, A2, and A3 in the Activity Table I167.4.1, which are for the activity of establishing a ‘New Landfill’ in Sub-precinct A, may be interpreted to allow for an application for a second (or larger) landfill in Sub-precinct A, in addition to the currently proposed landfill (in a related application for resource consents). It is noted that the airspace volume restriction for ‘Existing Landfills’ under the Restricted Discretionary Standards will prevent an application for a larger landfill beyond the airspace volume restriction. A second landfill, if applied for, would be assessed as a Discretionary Activity. As it does not appear to be the intention of the PALRP application to establish or allow for more than one landfill in Sub-precinct A; and doing so would result in an increase in the potential effects (proportional with the increased landfilling area), it is considered that this should be made explicit in the PARLP provisions e.g. a specific declaration that only one landfill will be able to be established in Sub-precinct A.

6.0 Conclusions and Recommendations

Based on my assessment as outlined above, I make the following conclusions:

- I do not consider that the applicant has wholly assessed the private plan change effects on the environment related to potential effects on groundwater quality.
- I consider that the private plan change is largely consistent with the direction and framework of the Auckland Unitary Plan (Operative in part), including giving effect to the Regional Policy Statement.
- The proposed wording of the private plan change provisions is largely consistent with the National Policy Statement which is relevant to my area of expertise and assessment, being the National Policy Statement for Freshwater Management 2020.
- Overall, I am able to support the private plan change but request modifications to the precinct provisions as discussed in Section 5, and summarised as follows:
 - The requirement for the objectives of the PARLP to explicitly state that the adverse effects on groundwater quality will be avoided to the extent possible, and if not effects will be remedied or mitigated;
 - The requirement for the policies of the PARLP to more strongly state that adverse effects on groundwater quality will be avoided to the extent possible, and if not effects will be remedied or mitigated;
 - Including explicit mention of the requirement for planning and implementation of closure and aftercare aspects within the precinct policies and objectives.
 - Due to the critical importance of waste acceptance procedures in preventing adverse environmental effects, explicit mention of this aspect should be made in the precinct policies and objectives.

- Addition of an explicit limitation to the establishment of new landfills under Discretionary Activities A1, A2, and A3 in the Activity Table I167.4.1, such that only one landfill can be established in Sub-precinct A.
- It is recommended that the following wording amendments (or similar wording to the same effect) is inserted in to Objectives #3 and #4 (see bold underlined text for recommended insertions).

3. *The Auckland Regional Landfill is designed and operated so that the adverse effects of discharges to land and water, **including groundwater**, from the landfill are avoided, remedied or mitigated.*

- It is recommended that the following wording amendment (or similar wording to the same effect) is inserted into Policy #3 (see bold underlined text for recommended insertions). Alternatively, the applicant can propose additional policies and / or insert the wording regarding WAC that was previously proposed in the T&T letter of March 2020, that would stress the importance of waste acceptance procedures and closure/aftercare planning as a means of preventing adverse environmental effects.

3. *Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise:*

- a. *adverse effects on the quality of freshwater, **including groundwater**, including from contamination and sediment;*
- b. *adverse effects from contaminants, and the potential for these to enter freshwater, **including groundwater**, from both point and non-point sources;*
- c. *adverse effects on mana whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and*
- d. *adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply;*
- e. *adverse effects on the quality of air, including from the discharge of contaminants and odour;*

including through the adoption of:

- *the best practicable option for the treatment and discharge of stormwater,*
- *the use of an industry best practice lining system,*
- **waste acceptance procedures and criteria that prevent the acceptance of waste that could result in discharges that could adversely affect human health and / or environmental receptors,**
- **closure and aftercare procedures and monitoring that are industry best practice for these activities at the time of implementation,** and
- *the provision of an appropriate buffer within the precinct.*

- It is recommended that the following addition is made to the Discretionary Standards at I617.6(2).

I617.6(2) Discretionary Standards

X. Only one landfill may be established in Sub-precinct A.

Memo (technical specialist report to contribute towards Council’s section 42A hearing report)

21 September 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Alan Pattle (Pattle Delamore Partners Ltd)

Subject: Private Plan Change – Auckland Regional Landfill – Landfill Engineering and Landfill Operations

1.0 Introduction

1.1 I have undertaken a review of the private plan change (PPC) application, on behalf of Auckland Council in relation to Landfill Engineering and Landfill Operations.

My name is Alan David Pattle. I hold the role of Technical Director – Water and Geotechnics at Pattle Delamore Partners Ltd. I hold Bachelor of Engineering (Civil), and a Master of Engineering (Civil) from the University of Canterbury, New Zealand. I am a Chartered Professional Engineer, a Chartered Member of Engineering New Zealand, and a member of the Association of Groundwater Scientists and Engineers, USA.

I have 45 years of experience in civil/environmental engineering and hydrogeology including consenting for many regional municipal landfills around New Zealand. I have been Chairman of the Redvale Landfill Peer Review Panel since 2000 and a member of the Greenmount Landfill Engineering Review Panel since 2015.

1.2 In writing this memo, I have reviewed the following documents either in whole or in part:

- Auckland Regional Landfill Private Plan Change Request –Assessment of Effects and Section 32 Analysis (T+T July 2019).
- Auckland Regional Landfill Assessment of Environmental Effects (T+T May 2019) and associated supporting Technical Reports.
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 15 November 2019)
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 3 February 2020)
- Clause 23 Response: Auckland Regional Landfill – Private Plan Change (T+T, 4 March 2020)
- Submissions – Online Submission Report – summary of PPC42 submissions, prepared by Auckland Council.

I note that there have been several iterations of the proposed precinct provisions, as these have been revised in response to Clause 23 questions and comments. In writing this memo, I am referring to the latest iteration of the proposed precinct provisions, as provided in the ‘Clause 23 Response: Auckland Regional Landfill – Private Plan Change, Appendix D’ (T+T, 3 February 2020) (the precinct wording as notified).

2.0 Key Issues

In identifying the key issues below, I also acknowledge those that have been raised by my colleagues in hydrogeology and waste acceptance, with which I am in general agreement. For brevity I do not

repeat those issues here except where I consider they are fundamental to Landfill Engineering aspects.

1. The proposed Auckland Regional Landfill precinct ('PARLP') objective I617.2 (3) mirrors the underlying Unitary Plan Objective E13.2. (1) in that it refers to "designed and operated" so as to avoid adverse effects of discharges. However, missing is the word "construction" which makes an important contribution to this objective. In particular, the competent construction of the landfill liner has a significant bearing on its performance as a leachate and gas containment barrier and its effective lifetime. Research has shown a significant reduction in effective lifetime of High Density Polyethylene (HDPE) liners if they are constructed with wrinkles, put in tension, and/or subjected to localised stretching (indentations) from overlying or underlying granular materials.
2. PARLP objective I617.2 (3) departs from Unitary Plan Objective E13.2. (1) in that it refers to "adverse effects of discharges to land and water from the landfill" rather than the broader wording of "adverse effects on the environment". Missing from this objective is the word "air" which is an important component of the environment and not covered elsewhere in the precinct objectives. It is acknowledged that the minimisation of odour, in particular, is a significant and ongoing challenge for landfill operations as it is inherent in the handling and control of substances that are undergoing active biodegradation. Nevertheless, the precinct should include provisions seeking to avoid, remedy and mitigate discharges to air as it does for the two other types of discharges, to land and water.
3. There is an absence of an objective and policy to manage the waste in the landfill so that it is stabilised into an inert state as rapidly as possible, without compromising the other environmental objectives. Attainment of a stabilised state in the waste reduces the aftercare period and associated time related risks such as climate change, earthquake and infringing regional development plans. The nature of waste accepted into the landfill, the design of the containment system (landfill liner and cap), and management of the landfill operations all influence how long the waste takes to stabilise through the various biochemical processes that take place. These elements should be tied together towards this common objective so that end use activities can proceed as soon as possible after the landfill's closure to make efficient use of the site's land resource.
4. PARLP Standard I617.6(1)(3) and I617.6(2)(2) define the minimum landfill liner standard to be used for any landfill in the precinct. While items (a) and (b) (Type 1 and Type 2 standards) meet current industry best practice, the wording of the precinct standards does not ensure that advances in liner best practice are applied in the future. It is recommended that the wording of the standard is modified as follows:

.....A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:

5. PARLP Assessment Criteria I617.8.2. (10) covers aftercare. As aftercare is an activity that transitions the site from a landfill to a different end use, the aftercare plan should facilitate this as efficiently and effectively as possible. As such it is recommended that the wording of 10 (b) and f (ii) be changed to:

" timing and standard of aftercare activities to efficiently and effectively transition to the end use."

3.0 Applicant's assessment

The basis for the precinct proposed by WMNZ is that this site is unique in an Auckland context, providing a combination of features which resulted in its selection following an extensive site selection process that

has taken nearly a decade. Following selection of the broader site, further, more detailed assessment was undertaken for the applicant to confirm that Valley 1 is suitable for a landfill development.

In their Assessment of Environmental Effects (AEE) to support the request for a Private Plan Change (PPC), WMNZ states that a PPC is being sought to introduce a precinct into the AUP to recognise and provide for landfill development on the site, given its assessed suitability for such land use. The precinct is to record the potential future presence of a landfill on the site in the planning maps, to appropriately recognise landfills as infrastructure within the AUP, and to enable efficient operation of a future landfill at the site throughout its operating life.

I note that the PPC would only authorise the placement of waste within Sub-precinct A. The establishment of a landfill outside of Sub-precinct A would be a non-complying activity which I consider to be the appropriate activity status. To go to prohibited status would be further than is justified on the basis of the present information and the history of landfill development in various settings. While it might be very difficult to justify a landfill in some other parts of the precinct, in my view, such a proposition can be dealt with satisfactorily via the resource consent process.

The geology within the proposed landfill footprint identified in Sub Precinct A includes variably weathered and fractured Pakiri Formation bedrock and associated residual soils. Much of the bedrock and residual soils have low permeability, which should provide good natural containment. The deeper bedrock is fractured which has potential to provide more rapid pathways for the passage of any escaped leachate. Additional engineering measures, involving the addition of extra clay liner thickness will need to be provided where fractured rock occurs close to the base of the landfill to provide additional backup protection. The rock and soil materials available on site are generally suitable for liner construction and landfill operation.

I note that several existing landfills in the Auckland region are sited on similar geology and topography. These include Hampton Downs and Whitford Landfills, both regional scale landfills like that which would be enabled in sub-precinct A, both consented within the last 25 years. The relatively uneventful operation of these landfills in terms of leachate containment provides reassurance that this type of site setting is suitable for landfilling activity.

The PPC AEE states that the proposed objectives and policies for the precinct are intended to enable establishment and operation of a landfill and ancillary activities within the precinct, whilst requiring effects to be appropriately managed to the extent practicable. The PPC AEE states that the objectives and policies, which are both regional plan and district plan provisions, give effect to provisions of the RPS component of the AUP.

The PPC AEE report assessed the PPC against the requirements of Schedule 1 and s32 of the RMA, and concluded that:

- The proposed precinct will generate positive effects, and has no level of adverse effects which would make the site unsuitable for consideration for landfill construction and operation.
- The precinct and sub-precinct provisions will ensure future development on the precinct gives effect to and is consistent with the AUP Regional Policy Statement, the regional and district plan objectives and policies in the AUP, as well as the Auckland Plan.
- The proposed precinct, including the objectives, are consistent with the purpose of the RMA. The proposed objectives of the PPC are the most appropriate and effective means of achieving the purpose of the RMA, compared to the current zone or practicable alternative options.
- The proposed precinct is the most appropriate option for achieving the objectives of the PPC and more broadly the objective and policies of the Unitary Plan. The PPC will efficiently and effectively achieve the overarching objectives of the AUP, in particular the themes of enabling infrastructure whilst ensuring effects of future activities within the precinct are appropriately assessed and managed.

4.0 Submissions

Over four hundred (412) submissions have been received in response to the PARLP of Private Plan Change 42.

I have reviewed specific submissions relating to landfill engineering and operation, as well as reviewing the submission summaries compiled by Auckland Council.

In relation to matters of landfill engineering and operation, submitters' express a number of concerns which may be summarised as follows:

1. That the precinct will allow the establishment of a landfill and the placement of waste in a site that is not suitable for such activity, such that it:
 - a. is a site geologically unsound for a landfill
 - b. is a site with high rainfall
 - c. may result in adverse effects to surface water receptors (streams, the Hotoe River, the Kaipara Harbour), and the ecosystems that those receptors support.
 - d. may result in adverse effects to groundwater quality.
 - e. will generally degrade what is considered to be a pristine environment.
2. Regulatory Themes
 - a. The proposal conflicts with the purpose and principals of the RMA, and other policies e.g. (National Policy Statement on Freshwater 2020)
 - b. The proposal conflicts with the Auckland Unitary Plan (in several instances)
 - c. Use of management plans is not sufficient to provide positive outcomes

Almost all of the submitters oppose the creation of the PARLP (and the establishment of the landfill), on the grounds summarised above (and including other objections not assessed by this memo).

5.0 Assessment of effects

A potential landfill within the precinct would be a permanent piece of infrastructure that would become part of the local environment in the long term. During its life, the effects on the environment of a potential landfill in the precinct will change with the evolving sequence of the development.

In the early stages of development there will be adverse effects that cannot be avoided or mitigated due to the occupation of the precinct land and waterways by the facility. These adverse effects include the loss of streams, springs and ecology within the precinct. This is acknowledged in policy I617.3 (5).

I accept that it is undesirable for the plan to have a policy that foresees the loss of such natural resources in the precinct. However, in my experience it is very difficult to find landfill sites that do not in some way impact one or more water courses. The size of regional scale landfills in relation to upper stream catchments in the Auckland region (because of the geology), would make siting of landfills that avoid watercourses anywhere in the region extremely difficult. Inclusion of the policy, I believe is necessary to acknowledge this reality.

Effects from the operational period of the landfill are covered by the policies in I617.3.(3) but could be strengthened by wider policy on groundwater protection as covered in the Hydrogeology and Waste Acceptance s42A technical reports.

Provisions regarding aftercare of the landfill are very limited: I617.2 aims to protect adverse effects on human health from (operational and) closed landfills. In addition, the Assessment Criteria for RDA's, eg (I617.8.1 (i)) reference closure and after-care plans (if the landfill is likely to close within the duration of the consent). During the aftercare period of the ARL the adverse effects on the environment from discharges would be expected to diminish as the waste stabilises towards an inert state. However, this process may be as long, or longer, than the operational period that precedes it. The precinct objectives

under I617.2 should correspondingly be strengthened to recognise the long-term impacts that the precinct enables.

While the submitters express concern about a range of effects such as high rainfall, unstable land, flooding, groundwater contamination, it is my view, based on the information provided by the applicant, that none of these issues are so extreme that they cannot be satisfactorily managed by best practice engineering approaches and measures. Infrastructure, including other landfills, contend with these conditions in the local area or in other situations where similar environmental conditions are present. The concerns raised though by the submitters are quite valid and need to be addressed thoroughly in future landfill development plans to ensure they do not result in the outcomes feared. The precinct provisions are structured (as they should) so that the activities with the highest potential effect have discretionary status, giving more latitude to manage the effects of these issues through the resource consent process. In this regard, I agree with the applicant's assessment.

6.0 Conclusions and recommendations

Overall, I support the proposed Auckland Regional Landfill outlined in the private plan change to manage the adverse effects from an engineering and operational perspective. The information provided is sufficient to establish the suitability of the precinct for landfill construction and operation without undue risk of significant environmental effect. Key risks such as leachate escape need to be mitigated through the use of a minimum standard lining system which has been included in the standards for the plan change.

I recommend that the following changes/additions be made to the plan:

1. That the word "construction" be added to PARLP objective I617.2 (3), and the word "air" is added. ie

The Auckland Regional Landfill is designed, constructed and operated so that the adverse effects of discharges to land, air and water from the landfill are avoided, remedied or mitigated.

2. That PARLP Standard I617.6(1)(3) and I617.6(2)(2) be changed to

.....A lining system must be installed prior to waste being placed within any area of Sub-Precinct A. The proposed lining system for the landfill must be to industry best practice standards prevailing at the time of construction with a minimum of one of the following types:

3. That PARLP Assessment Criteria I617.8.2. (10) be changed to:

10. *the adequacy of the site aftercare plan including:*
 - a. *aftercare activities to address the risk posed by the contaminants to the environment: and*
 - b. *timing and standard of aftercare activities to efficiently and effectively transition to the end use.*

4. That an objective and policy is added to manage the waste in the landfill so that it is stabilised into an inert state as rapidly as possible, without compromising the other environmental objectives. Attainment of a stabilised state in the waste reduces the aftercare period and associated time related risks such as climate change, earthquake and increased reverse sensitivity risk from intensification of neighbouring landuse.

The suggested new objective to cover the long term environmental risk is as follows:

The Auckland Regional Landfill is designed and operated so that the waste becomes stabilised to an inert state as quickly as practicable following placement to enable timely transition to productive end use after landfill closure.

The suggested supporting new policy is as follows:

Require the use of waste acceptance criteria, operational practices and closure measures that optimise the stabilisation of the waste as quickly as possible following emplacement in the landfill. The aspects to be controlled include arrangement, compaction and moisture levels in the waste and landfill gas production.

Private Plan Change 42: Auckland Regional Landfill – Air Quality Assessment

To: Ryan Bradley, Principal Planner – Plans and Places

From: Paul Crimmins, Senior Specialist – Contamination, Air & Noise

Date: 21 September 2020

1 Executive summary

Waste Management NZ Ltd proposes a Private Plan Change to the Auckland Unitary Plan (Operative in Part) (AUP(OP)) by introducing a new Precinct to recognise and provide for the proposed Auckland Regional Landfill in Dome Valley, Rodney. This review assesses the air quality effects of Private Plan Change 42 ('the PPC'). I have also prepared a memo for the associated Resource Consent application.

The PPC includes Objectives and Policies relevant to air quality that are to be read 'in addition to' those within AUP(OP) Chapters B7.5 and E14 of the AUP(OP). Proposed Precinct rules would classify air discharges from landfills and associated energy generation activities as either Restricted Discretionary, Discretionary, or Non-Complying Activities. These provisions are similar to those currently within AUP(OP) Chapter E14 and would continue to require resource consents for significant air discharge activities within the Precinct.

The air quality effects considered in this memo relate to the Precinct's provisions relating to air discharges of hazardous air pollutants (those with health impacts), odour and dust. Section 70A of the Resource Management Act 1991 precludes council from setting rules relating to the effects on climate change from greenhouse gas emissions. Therefore, greenhouse gas impacts are not considered in this memo.

I consider the PPC's air quality effects have been adequately assessed and that the proposed Precinct provisions relating to air discharges are generally in accordance with the overall direction of the AUP(OP).

I support the PPC with regards to air quality subject to my recommended minor amendments to the proposed wording of the Precinct provisions in section 5.3 of this memo.

2 Introduction: Air quality assessment

2.1 Scope of air quality assessment

As requested, I have reviewed the above Private Plan Change (PPC) application, relevant supporting information, and submissions received, on behalf of Auckland Council in relation to air quality effects.

This review pertains to the PPC application only; please refer to my separate memo for an assessment of the air quality effects of the associated (but separate) application for resource consent to discharge contaminants into air from the proposed construction and operation of the Auckland Regional Landfill dated 9 September 2020 (referred to herein as 'the RC-AQ Memo', relating to application BUN60339589 / DIS60343780).

2.1.1 Climate change

Section 70A of the Resource Management Act 1991 (RMA) states that councils must not have regard to the climate change effects of air discharges when making plan rules, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases. Therefore, it is only within this narrow framework that I have reviewed climate change effects of the PPC, noting that most concerns raised by submissions fall outside of this scope and should be addressed at the national level as directed by the *Resource Management (Energy & Climate Change) Amendment Act 2004*.

Please refer to my separate climate change memo dated 28 August 2020 for further information on how greenhouse gas emissions from the landfill are regulated.

2.2 Material reviewed

I have reviewed the following documents received as part of the PPC application and responses to requests for further information:

- *Auckland Regional Landfill: Private Plan Change Request: Assessment of Effects and Section 32 Analysis*, Tonkin & Taylor, 17/07/2019 ('the s32 Report');
- *Auckland Regional Landfill: Air Quality Assessment*, Tonkin & Taylor, 30/05/2019 ('the AQR');
- *Auckland Regional Landfill: Human Health Risk Assessment*, Tonkin & Taylor, 20/08/2019 ('the HRA');
- *Clause 23 Response: Auckland Regional Landfill – Private Plan Change*, Tonkin & Taylor, 15/11/2019 ('the c23 Response').

I have also reviewed all submissions received that are relevant to air quality effects (including dust, odour, human health risk via airborne exposure to hazardous air pollutants, and climate change).

2.3 Reviewer information: Qualifications and experience

My full name is Paul Edward Crimmins and I am employed as a Senior Specialist within the Contamination, Air & Noise Team of Auckland Council's Specialist Unit at Graham Street, Auckland Central.

As detailed in my RC-AQ Memo, I have over ten years' experience in air quality assessments (human health and amenity effects) and hold a Master of Science (First Class Honours) in Environmental Science from the University of Auckland (2018), and a BSc (Environmental Science) and BA (Politics) from the University of Auckland (2009).

3 Proposal: Air quality

3.1 PPC as relevant to air quality

The applicant, Waste Management NZ Limited (WMNZ), is seeking a PPC to introduce a new Precinct under Chapter I of the AUP(OP) that recognises and provides for landfill activities. A full description of the PPC is provided in the s32 Report. The proposed spatial extent and precinct provisions are supplied in Appendix A of the c23 Response, labelled as proposed AUP(OP) Chapter I617.

Particularly relevant to air quality:

- The proposed Precinct covers an area of approximately 1020 ha of plantation forestry and farmland at the northern end of Dome Valley and includes 'Sub-Precinct A', an area of approximately 120 ha where the Precinct directs any landfill to potentially be established. This is the same area within which WMNZ propose to construct and operate a new landfill for municipal waste (the 'Auckland Regional Landfill' (ARL), subject to resource consent application BUN60339589).
- The Precinct Objectives, Policies and Rules apply in addition to those of AUP(OP) Chapter E14 Air Quality, excepting Rule E14.4.1(A160) (air discharges from landfills are a Non-Complying Activity) which would be replaced by Rules I617.4.1(A2 or A6).
- Discharges of contaminants into air from a new landfill within Sub-Precinct A would be a Discretionary Activity under Rule I617.4.1(A2) if standards in I617.6.2 are achieved.
- Rule I617.4.1(A6) states that discharges of contaminants into air from 'existing' landfills within Sub-Precinct A would be a Restricted Discretionary (RD) Activity if standards in I617.6.1 are achieved.
- Rules I617.4.1(A2 & A6) represent a change in the activity status from the current Non-Complying activity status under Rule E14.4.1(A160), likely affecting any future re-consenting of air discharges from the proposed ARL.

- Air discharges from landfills outside Sub-Precinct A remain a Non-Complying Activity under Rules I617.4.1(A5) and E14.4.1(A160).
- Air discharges from biomass energy generation are a Discretionary Activity (Rule I617.4.1(A11) and other air discharge activities retain the activity status provided by Activity Table E14.4.1 (Permitted, Controlled, RD, or Discretionary Activities).
- The standards for RD (air discharges from existing landfills) and Discretionary (air discharges from landfills in Sub-Precinct A) Activities include requirements that waste is only placed within Sub-Precinct A to a maximum airspace volume of 28.5 Mm³ (approximately 10% greater than that proposed for ARL) and that there is no ‘offensive or objectionable odour’ at the Precinct boundary. If these standards are not achieved for any proposed activity, air discharges are a Non-Complying Activity under Rule I617.4.1(A15).
- For air discharges from existing landfills (RD Activity, I617.4.1(A6)), the matters of discretion and assessment criteria in I617.8.1 & I617.8.2 generally match those provided by E14.8.1 & E14.8.2 with minor amendments to include matters specific to landfill activities.
- The Precinct notification provisions state that normal tests for notification apply to all activities (no change from E14.5), except activities under Rules I617.4.1(A2 & A5) (relating to air discharges from new landfills) which would be publicly notified.

3.2 Key air quality issues

The key change proposed to be introduced by the PPC for air quality is to reduce the activity status of air discharges from landfills in Sub-Precinct A from Non-Complying (E14.4.1(A160)) to Discretionary (I617.4.1(A2)) or RD (I617.4.1(A6)). There would also be changes to the processing of any future air discharge consent applications within the Precinct due to the additional Objectives and Policies and amended matters of discretion and assessment criteria (for RD activities).

Given the change in activity status for air discharges from landfills in Sub-Precinct A, it is necessary to test if the location of the sub-precinct is appropriate – particularly if it provides adequate separation distances to activities sensitive to air discharges – to support the less-stringent activity status.

Further, the additional Objectives, Policies and Rules relevant to air quality in the Precinct need to be assessed for alignment with the provisions of the existing AUP(OP) (including the Regional Policy Statement) and higher order statutory documents.

A comprehensive assessment of air quality effects would still be required to accompany an application for resource consent lodged under the Precinct provisions. This assessment shall enable the specific design of any landfill, including air discharge controls, to be accounted for as part of the consent application process.

4 Assessment of effects: Air quality

4.1 Applicant's air quality assessment

Section 4.1 of the s32 Report states:

“the PPC is not authorising any works, in the sense of making any activities permitted, and the only change is to re-classify certain activities from non-complying, to either discretionary or restricted discretionary, and to insert specific objectives and policies relating to activities proposed within the precinct.

The proposed precinct provisions still require a detailed effects assessment of the design and operation of a proposed landfill as part of the consenting process. This would include the measures that the applicant proposes to avoid, remedy, mitigate, or off-set any potential adverse effects on the environment.”

The s32 Report focusses on the planning implications of the altered activity status and references the AQR to conclude that the location is appropriate for the Precinct.

A key rationale for the PPC is to introduce statutory recognition of the proposed ARL, so that any development near to the Precinct is less likely to cause reverse sensitivity effects into the future. The avoidance of reverse sensitivity effects (such as that introduced by residential subdivision near to the ARL) is considered to be a positive effect by the s32 Report.

The s32 Report also identifies a tension in the AUP(OP), where landfills are defined as ‘Infrastructure’, and therefore provided for by Objectives and Policies relevant to infrastructure, but also specified as Non-Complying Activities under Chapters E13 and E14. The provision of a Precinct for a landfill with less-restrictive activity status is stated to suitably resolve this tension.

The suitability of the site with respect to air quality, primarily considering separation distances from Sub-Precinct A to nearby activities sensitive to air discharges, is assessed in sections 4.4 and 4.5 of the s32 Report. It is noted that Sub-Precinct A has more than 1 km separation distance from neighbouring dwellings, and the underlying Rural – Rural Production Zone and plantation forestry environment provide for a suitable location with respect to air quality, including reduced air quality amenity expectations.

The operational controls to minimise air quality effects from any future landfill within the Precinct shall be assessed as part of any resource consent application (still required by the Precinct provisions). The s32 Report concludes that ‘given the large separation distances and the underlying zoning, there are no air quality effects which cannot be addressed through a resource consent process.’

The s32 Report initially sought to reduce the activity status for air discharges from ‘ancillary activities’ to landfills to RD. However, references to these ill-defined air discharges were removed from the final PPC (as detailed in the c23 Response).

4.2 Submissions relevant to air quality

A number of submitters raise concerns regarding air quality effects from an operative landfill within the proposed Precinct (including #157, 176, 395 & 399). While most of the submissions state the location is not suitable for the proposed Precinct, this is largely due to concerns regarding water discharges, including effects to freshwater and marine ecosystems from potential leachate discharges. The themes of the PPC submissions are largely similar to those received regarding the ARL consent application although the PPC submissions state air quality concerns in more general detail.

I address concerns relating to discharges of odour, dust, hazardous air pollutant discharges, the risk of fires and resulting effects from the proposed ARL in detail within the RC-AQ Memo. This level of air quality assessment would also be required for any future air discharge application for a landfill within the Precinct (whether RD or Discretionary Activity status). As above, I note that the PPC does not seek to authorise air discharges from a landfill.

Greenhouse gas emissions from a landfill and vehicles travelling to and from the site are raised as concerns by submitters (including #66, 221 & 410). As noted in section 2.1.1, climate change effects are largely beyond the scope of this review. However, I consider the emissions of hazardous air pollutants generated by the PPC (including from associated vehicle emissions) and resulting environmental effects is a pertinent consideration, further discussed in section 4.3.2 below.

Concerns regarding greenhouse gases from a landfill and alternative waste treatment options being available (such as ‘waste to energy’ incinerators) are raised by submitters (in most detail by #398). I note that greenhouse gas emissions are largely outside the scope of this memo, but any future landfill in the Precinct is required to control methane emissions in accordance with the *National Environmental Standards for Air Quality 2004* and would be subject to an assessment of the suitability of this system. I do not consider that ‘waste to energy’ facilities are a superior alternative with respect to air discharges, as detailed further in section 7.2 of my RC-AQ Memo.

J.M O’Sullivan (#127), references a study that identified a correlation between proximity of residents to nine Italian landfills and poor health outcomes, including respiratory disease and mortality (Matolini et al., 2016). This study is referenced in a literature review into the potential association between landfills and population health effects provided as Appendix A of the HRA, along with other similar studies, largely completed in Europe.

I agree with the HRA, that the literature regarding population health effects and landfills is unclear as to any correlation and/or required separation distances for landfills. There is an absence of data regarding health effects from modern landfills, such as the ARL proposed under BUN60339589 (these effects are further assessed in my RC-AQ Memo). Any future landfill proposed within the Precinct would be also subject to a detailed health-risk assessment, including analysis of any further scientific studies released.

4.3 Assessment of air quality effects

4.3.1 Introduction to air quality assessment

My assessment of the PPC reviews aspects relevant to air quality, recognising that the proposed Precinct rules do not seek to permit any air discharges, so that any future landfill activity assessed under the Precinct rules would be subject to a resource consent application with an associated assessment of air quality effects. My review of the PPC focuses on:

- The suitability of the location of the proposed Precinct with respect to air quality, including:
 - separation distances from Sub-Precinct A to activities sensitive to air discharges;
 - the meteorology of the area;
 - distances from waste sources, as relevant to the emissions of hazardous air pollutants from induced vehicle movements.
- Differences to the existing AUP(OP) air quality provisions introduced by the proposed Precinct Objectives, Policies and Rules.
- Alignment of the PPC's air quality provisions with regional and national statutory and guidance documents.
- Recommended changes to the proposed Precinct provisions to better avoid, remedy and avoid air quality effects.

4.3.2 Suitability of Precinct location: Air quality environment

As detailed in the s32 Report, the Precinct is proposed to cover an area of 1020 ha at the northern-end of Dome Valley. The Precinct Rules would reduce the activity status for air discharge activities from landfills within Sub-Precinct A only, a 120 ha area near the centre of the Precinct. This sub-precinct is separated from neighbouring activities sensitive to air discharges (including residential dwellings, as defined by Chapter J of the AUP(OP)) by at least 1 km.

This degree of separation achieves the Discretionary Activity Standard for air discharges from existing landfills in E14.6.4.1. A 1 km separation distance is also recommended for landfills to minimise odour nuisance by a guidance document prepared for Auckland Council, *Separation distances for industry* (Emission Impossible, 2012; included as Appendix 3.45.2 of the AUP's s32 Report). An analysis of odour complaints regarding Redvale Landfill is referenced in the AQR and s92 Response for application BUN60339589, finding that the most significant odour effects from that comparable landfill occur within 1 km of the landfill footprint.

Therefore, I consider that the location of Sub-Precinct A is suitably separated from activities sensitive to air discharges. It is only within Sub-Precinct A that the PPC

would reduce the activity status for air discharges from landfills (from Non-Complying to Discretionary or RD). An application for consent would still be required, which would be a further opportunity to review the suitability of the separation distance accounting for the specific design of the landfill and air discharge controls. Outside of Sub-Precinct A, air discharges from landfills are proposed to remain a Non-Complying Activity and also require specific assessment for the suitability of location and separation distances. As discussed below in section 4.3.4.3, I recommend this separation distance is maintained by avoiding the establishment of any activities sensitive to air discharges within the Precinct.

The meteorology of the Precinct area is detailed within the AQR. As noted in my RC-AQ Memo, the wind conditions and rainfall impact air quality effects from a landfill. Some submitters (including #395) raise concerns that the Precinct is within an area with very high rainfall and frequent storm events which increase the risks associated with leachate discharges from the landfill. I note that higher rainfall may also increase landfill gas (LFG) generation, although I consider the assumed LFG generation rates estimated within the AQR and HRA that underpin the assessment of hazardous air pollutant discharges are suitably conservative to account for this higher rainfall.

Specific wind conditions may direct odour or hazardous air pollutants toward sensitive receptors. Neighbouring submitters (including #154) raise concerns of nuisance effects such as odour. The AQR utilises a dispersion modelling methodology to predict how air discharges from a landfill within Sub-Precinct A and combustion of LFG for energy generation near the centre of the Precinct shall disperse into the surrounding area given the meteorological profile across the terrain. This exercise does not indicate that the complex terrain and meteorology of the Precinct area are likely to preferentially direct air discharges toward any sensitive receptor to such a point that the location of the Precinct is unsuitable.

Some submitters (including #108) also raised concerns regarding the susceptibility of the site to landfill fires from lightning strike. There are some reports of lightning strikes causing fires at waste sites internationally, notably a 2015 fire in a wood pile at an illegal dump near Melbourne (Fattal et al., 2016) and a small surface fire in 1996 at a collapsed waste pile in Ohio (FEMA, 2002). The risk of unplanned air discharges from a fire at the ARL is assessed within my RC-AQ Memo; any future landfill applied for under the Precinct provisions would be subject to a similar assessment. Here, I note that I do not consider the likelihood of lightning strike causes significantly greater or unmitigable risks to a landfill at this location to such a degree that the Precinct location is unsuitable.

The specific meteorological conditions and separation distances shall be considered at the time of any future application for air discharge consent lodged under the Precinct provisions, accounting for the specific design of the landfill and air discharge controls. The PPC does not alter the requirement for such an assessment for any future air discharge consent applications within the Precinct.

A wider consideration of the suitability of the Precinct location with respect to air quality is the distance from the main source of waste generation (Auckland City, approximately

80 km to the south) to the Precinct where landfills are provided for, and the likelihood of diesel trucks to transport waste there, with associated exhaust emissions.

Several submitters (including #71 & 399) raise concerns that the Precinct is too far from the source of waste, meaning that transport distances and associated emissions are too high. Submission #124 suggests that waste could be sent to the Precinct by train, which would greatly reduce the total air discharges generated by the Precinct. Given the Precinct's proximity of the railway, I agree that rail transport could mitigate associated exhaust emissions and air quality effects, despite the distance from refuse transfer stations in the city. As above, the greenhouse gas emissions and associated climate change impacts from vehicles travelling to and from the Precinct are beyond the scope of my review, although reducing the emissions of hazardous air pollutants from vehicle movements is a pertinent consideration.

The potential human health effects of exhaust emissions from vehicle trips generated by the proposed ARL are assessed in my RC-AQ Memo and determined to not be significant for that proposed landfill within the Precinct. Although health effects from exhaust emissions are not likely to be significant at any specific receptor, the wider health risks of these hazardous air pollutant emissions (in terms of the mass discharges to air) could be eliminated altogether if diesel heavy vehicles were not used. I recommend that an Objective and Policy should be introduced to the Precinct to discourage vehicle emissions (see section 5.3).

4.3.3 Alignment with existing AUP(OP) air quality provisions

The PPC proposes a new Precinct with specific Objectives, Policies and Rules relevant to air discharges from landfills and energy generation from waste biomass. The proposed objectives and policies for the Precinct are stated to be 'in addition to' the Auckland-wide AUP(OP) objectives and policies, including those within Chapter E14.

For any resource consent application received for air discharges within the Precinct, the decision maker would still consider the Regional Policy Statement ('RPS', Chapter B7.5) and Auckland-wide Objectives E14.2 and Policies E14.3 as part of the assessment of effects under section 104(1)(b). Notably, Policy E14.3(1) requires that air discharges are managed so that significant adverse effects on human health are avoided and all other adverse effects are remedied or mitigated. Policy E14.3(3) requires dust and odour discharges avoid, remedy or mitigate adverse effects within the Rural – Rural Production Zone, including by requiring adequate separation distances, with the provision for 'minor and localised' elevated dust and odour from the operation of infrastructure. Policy E14.3(8) requires the adoption of the Best Practicable Option and a precautionary approach to avoid, remedy or mitigate adverse effects from air discharges.

I consider that the additional Objectives and Policies of the proposed Precinct relevant to air quality do not substantively alter the direction of AUP(OP) Chapters B7.5 and E14. Objective I617.2(1) and Policy I617.3(1) seek to 'enable the development and continued operation' of a landfill and associated renewable energy generation as 'essential infrastructure.' I consider these provisions align with RPS Objectives B3.2.1,

B3.4.1(1) and B7.5.1(2) and Policies B3.2.2, B3.4.2 and B7.5.2(1)(f) and Regional Plan Objective E14.2(4) and Policies E14.3(3)(c)(iii) and E14.3(6)(c). These existing AUP(OP) Objectives and Policies also seek to enable infrastructure and renewable energy generation, including by providing for reduced air quality amenity in suitable locations.

To mitigate potential health and amenity effects of air discharge activities within the Precinct, Objective I617.2(2) states that ‘Human health is protected from adverse effects of operational or closed landfills’, and Policy I617.3(3)(e) requires that ‘adverse effects on the quality of air’ are minimised, including through the provision of an appropriate buffer distance. I consider these Objectives and Policies complement the existing provisions of AUP(OP) Chapters B7.5 and E14, although I recommend a minor widening of the scope of Objective I617.2(2) to account for all air quality effects from landfills (human health and amenity).

The PPC retains most of the relevant RD matters of discretion and assessment criteria for the consideration of air discharge consent applications for ‘existing landfills.’ I617.8.1(1)(d) states that a matter of discretion for RD air discharge activities is the: ‘quantity, quality and type of discharge, including biological contaminants, and any effects arising from that discharge.’ This is identical to E14.8.1(12)(a) and shall continue to enable a wide-ranging assessment of effects for any air discharge activity in the Precinct.

Other air discharge activities that may be introduced alongside landfilling activities (such as waste processing activities) would not be impacted by the PPC, retaining their activity status and assessment framework under AUP(OP) Chapter E14. While a new Discretionary Activity Rule is included for discharges to air from energy generation from waste biomass (I617.4.1(A11)), I note this activity status is identical to that provided by E14.4.1(A54) (air discharges from combustion activities not provided for, including combustion of LFG).

Overall, I consider that the Precinct’s provision for air discharges from landfills (as infrastructure as defined by the AUP(OP)) generally aligns with the wider AUP(OP). I consider that the Precinct provisions mean that, in practice, an air discharge consent application lodged under the Precinct provisions would still be subject to a robust assessment of effects and do not introduce additional restrictions of matters or controls to suitably avoid, remedy or mitigate air quality effects.

4.3.4 Alignment with other air quality statutory provisions and guidance documents

I consider that the PPC’s air discharge provisions are relevant to the *National Policy Statement for Renewable Electricity Generation 2011* ([NPS:REG](#)) and *Resource Management (National Environmental Standards for Air Quality) Regulations 2004* ([NES:AQ](#)). Further non-statutory guidance documents particularly relevant to air discharges include:

- *Good Practice Guide for Assessing Discharges to Air from Industry* ([‘GPG:Industry’, Ministry for the Environment, 2016](#));

- *Good Practice Guide for Assessing and Managing Odour* ([‘GPG:Odour’, Ministry for the Environment, 2016](#));
- *New Zealand Technical Guidelines for Disposal to Land* ([‘Landfill Guidelines’, WasteMINZ, 2018](#)).

Many submitters raise the *Low Carbon Auckland: Auckland’s Energy Resilience and Low Carbon Action Plan 2012* and *Auckland’s Climate Action Framework 2019* as non-statutory documents relevant to the PPC. These climate documents have recently been superseded by *Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan*, which Auckland Council adopted on 21 July 2020. Notably, these and the *Auckland Waste Management and Minimisation Plan 2018* set a goal of ‘zero waste’ by 2040.

I consider these are important documents to assess the PPC against, although note they are not directly relevant to the air quality considerations as limited by the scope of this review.

4.3.4.1 National Policy Statement for Renewable Electricity Generation 2011

Section 5.2.1.1 of the s32 Report outlines that the energy to be provided by the combustion of biogas (LFG) is considered to be a form of renewable energy generation and is therefore provided for by the NPS:REG. I agree with this categorisation, noting that the *NPS:REG Technical Guide* ([EECA, 2013](#)) specifically refers to organic waste within landfills as a source of renewable biomass energy.

The Policies of the NPS:REG direct that the benefits of renewable energy generation activities shall be recognised, particularly through the reductions of greenhouse gas emissions. Objective I617.2(1) and Policy I617.3(1) complement the existing AUP(OP) RPS Objectives and Policies discussed above to further give effect to the NPS:REG.

Section 70A of the RMA provides for the assessment of greenhouse gases within this framework of renewable energy provision. Within this scope, I agree that the Precinct’s provision for air discharges from the generation of electricity from the combustion of LFG may enable some reduction in the discharge of greenhouse gases from electricity generation using fossil fuels.

However, I also note that other biogas capture and renewable energy generation options are available for organic waste streams, typically with less significant effects than are associated with landfills. Such renewable energy generation includes in-vessel composting operations where all methane is captured and utilised for electricity generation. I consider that such alternate biomass treatment options provide superior renewable energy generation opportunities than are achieved by landfills and would better give effect to the NPS:REG. These smaller separated biomass treatment operations are likely to have a lower overall carbon footprint than landfills (particularly considering transport emissions and fugitive LFG discharges).

Some submissions, such as #111 and #378, assert that ‘waste to energy’ incinerators are also superior alternatives to landfill. I consider these alternatives in section 7.2 of my RC-AQ Memo, concluding that they are not likely to fulfil objectives for waste

minimisation and air quality. I note here though, that such alternative waste-to-energy facilities could also give effect to the NPS:REG.

While the combustion of LFG for energy generation is supported by the NPS:REG, it results in the discharge of contaminants into air. The actual and potential effects of these hazardous air pollutant discharges shall continue to be assessed as a Discretionary Activity under the Precinct provisions.

Overall, I consider the Precinct's enabling of renewable energy generation from LFG combustion gives effect to the NPS:REG while appropriately mitigating adverse air quality effects.

4.3.4.2 Resource Management (National Environmental Standards for Air Quality) Regulations 2004

The NES:AQ sets prohibited air discharge activities, ambient air quality standards, and design standards relevant to the design and operation of landfills. Any future air discharge activity applied for within the Precinct would be subject to an assessment against the NES:AQ provisions, as has been completed for BUN60339589.

For certainty of compliance with the NES:AQ, RD and Discretionary Standards could be included in the Precinct specifying that greenhouse gas emissions from any landfills are to be controlled by extracting and destroying methane in accordance with the NES:AQ. Section 70B of the RMA enables such rules to be set within a plan provided they are no more or less restrictive than the NES:AQ. However, I do not recommend a specific reference to the NES:AQ regulations in the Precinct provisions as these minimum requirements may change, and any application for a future air discharge activity would be better assessed against greenhouse gas emission standards that are in force at the time.

4.3.4.3 Non-statutory guidance

The GPG:Industry and GPG:Odour note that landfills involve air discharges, including odour, and should be adequately separated from sensitive receptors, such as residential dwellings to minimise adverse effects. The proposed Precinct is located in a rural area (Rural – Rural Production Zone), which the GPG:Industry notes as having a low population density, meaning there is a decreased risk of people being adversely affected by air discharges. In addition, the Precinct is surrounded by a significant area of forestry and native bush meaning there are few sensitive receptors near the Precinct (particularly Sub-precinct A). However, the GPG:Odour notes that people living in rural areas may be sensitive to odours from non-rural activities (including landfills).

RD and Discretionary Activity Standards are proposed for the Precinct (I617.6.1(4) & I617.6.2(3)) that state that *'There shall be no offensive or objectionable odour at the Precinct boundary caused by the landfilling operation, in the opinion of a suitably qualified enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).'*' This generally accords with a condition of consent to limit odour discharges from industrial

activities recommended by the GPG:Odour and GPG:Industry. I recommend a minor amendment to the wording of this standard to better reflect these guidelines as described in section 5.3 below.

The challenges of reverse sensitivity, as highlighted as a reason for the PPC in section 4.2.1 of the s32 Report, are discussed in section 3.2.4 of the GPG:Odour. The maintenance of an appropriate separation distance between air discharge activities and sensitive receptors is recommended by the GPG:Odour to minimise reverse sensitivity effects. As discussed in section 4.3.2, a 1 km separation distance is recommended by the *Separation distances for industry* report (Emission Impossible, 2012).

I recommend that the ARL (or another landfill established within Sub-Precinct A) should be suitably separated from activities sensitive to air discharges into the future to minimise adverse effects, including reverse sensitivity effects. It is feasible (although perhaps unlikely given the WMNZ ownership) that land within the Precinct could be developed to cause reverse sensitivity effects to a landfill in Sub-Precinct A. To avoid this potential conflict, I recommend a Rule to make the establishment of any activity sensitive to air discharges (as defined by AUP(OP) Chapter J) within the Precinct a Non-Complying Activity. The requirement for a consent application under this Rule would enable an assessment of potential reverse sensitivity effects to any landfill in Sub-Precinct A. This Rule would only apply to land within the Precinct, largely being within the recommended 1 km buffer from Sub-Precinct A, and therefore not affect property outside the Precinct.

The Landfill Guidelines include recommendations for the siting of Class 1 Municipal Solid Waste landfills. Relevant to air quality is the recommendation that separation distances and the proximity of sensitive receptors are accounted for in the site selection, along with topography and meteorology that may impact off-site air quality effects. I consider that the location of the Precinct has appropriately accounted for these recommendations, noting that the appropriateness of the location and adverse air quality effects would be more-thoroughly assessed as part of any application to establish a landfill within the Precinct.

Overall, I consider that the PPC does not restrict an assessment of any future application for an air discharge consent within the proposed Precinct from an assessment in accordance with relevant non-statutory air quality guidance documents. The selection of the Precinct location has adequately accounted for the recommendations of these guidance documents as relevant to air quality considerations, particularly in the separation distances from Sub-Precinct A and activities sensitive to air discharges.

4.3.5 Assessment of air quality effects conclusion

The s32 Report concludes that the PPC does not introduce any air quality effects that cannot be addressed through a resource consent process. I agree with this conclusion, noting that the location and size of the proposed Precinct enables the maintenance of separation distances to activities sensitive to air discharges and that

any future air discharge activities would require a robust air quality assessment as part of a consent application under the Precinct provisions.

I consider the PPC aligns with the direction of the existing AUP(OP) relating to air quality. Although I note that there are other waste treatment options that may better satisfy the NPS:REG with less air quality effects than the renewable energy generation provided for by the PPC (from the combustion of LFG), I agree that the PPC does give effect to the NPS:REG by providing for renewable energy generation. I particularly note that the Objectives and Policies of the Precinct are ‘in addition to’ the existing AUP(OP) provisions for air quality effects and also include requirements to minimise health and amenity effects, meaning that the PPC would not restrict an assessment of air quality effects from future activities within the Precinct.

In a future scenario where air discharges from a landfill were to be assessed under the Precinct provisions as a Restricted Discretionary or Discretionary Activity, I consider that the resource consent application’s air quality assessment would not notably differ from that under the existing AUP(OP) and shall enable a fulsome assessment of actual and potential air quality effects, including notification of potentially affected persons under section 95 of the RMA.

I recommend some minor amendments to the wording of the Precinct’s air quality provisions to reduce the Precinct’s air quality effects and better align with the RPS and non-statutory guidance documents, as discussed below.

5 Recommendation

5.1 Adequacy of information

The above air quality assessment is based on the information submitted as part of the PPC application. I consider that the information submitted is sufficiently comprehensive to enable the consideration of air quality matters on an informed basis:

- The level of information provides a reasonable understanding of the nature and scope of the PPC as it relates to air quality.
- The extent and scale of any adverse air quality effects are able to be assessed.
- Persons who may be adversely affected are able to be identified.

5.2 Recommendation

The above air quality assessment does not identify any reasons to recommend declining the PPC, and I consider the PPC application could be approved with minor recommended amendments for the following reasons:

- The Precinct does not permit or authorise any air discharges not already permitted by the AUP(OP) without an application for resource consent;
- The Precinct provisions require a robust assessment of air quality effects as part of a resource consent application prior to the authorisation of any significant air discharge activity, such as a landfill;
- The Precinct's Objectives, Policies and Rules relevant to air quality align with those of the AUP(OP) RPS and Chapter E14;
- The Objectives and Policies of the Precinct are 'in addition to' the existing AUP(OP) provisions for air quality effects and include adequate requirements to minimise health and amenity effects of air discharges;
- For RD air discharge activities (air discharges from existing landfills within Sub-Precinct A), the matters of discretion and assessment criteria enable a robust assessment of air quality effects, without substantive change from that provided for by the existing AUP(OP);
- The location of the Precinct is not unsuitable from an air quality perspective to such a point that the adverse effects of any future air discharge activities applied for under the Precinct Rules could not be adequately addressed at the resource consent decision-making stage;
- The location of Sub-Precinct A, where air discharges from landfills are proposed to be reduced in activity status from Non-Complying to either Discretionary or RD, is adequately separated from activities sensitive to air discharges to

provide for landfills, noting that the specific effects and adequacy of separation for any particular landfill would be assessed as part of an application for resource consent;

- Outside of Sub-Precinct A, air discharges from landfills shall remain a Non-Complying Activity, as currently provided for by the AUP(OP) Rule E14.4.1(A160);
- The Precinct's provision for renewable energy generation from LFG combustion gives effect to the NPS:REG;
- Compliance with the NES:AQ is not impacted by the PPC;
- The PPC generally accords with relevant air quality non-statutory guidelines.

5.3 Recommended Precinct air quality provisions

I recommend that the proposed Precinct wording supplied in Appendix A of the PPC is generally appropriate for air quality matters.

I recommend minor amendments to:

- Objective 2: To broaden the scope so that human health, ecology and amenity are protected from adverse effects (for example, from odour discharges).
- Policy 1: To highlight the importance of maintaining adequate separation distances between Sub-Precinct A and activities sensitive to air discharges to enable the continued operation of the ARL (minimising the potential reverse sensitivity effects). This Policy follows from Objectives 1 & 2.
- Policy 3: To highlight the importance of industry best practice landfill gas controls to minimise air quality effects. This Policy follows from Objective 2.
- New Policy 7: To minimise discharges of hazardous air pollutants from vehicles accessing the Precinct, including by prioritising the use of rail or zero-exhaust emission transport. This Policy follows from Objective 2.
- New Rule (A16): To introduce a Non-Complying Activity Rule for the establishment of activities sensitive to air discharges within the Precinct to minimise reverse sensitivity effects to ARL and give effect to Objective 1 and Policy 1.
- RD and Discretionary Standards: To remove reference to 'ancillary activities' (not defined) and align the wording regarding offensive or objectionable odour with the recommendations of the GPG:Odour and section 38 of the RMA.
- RD matters of discretion: To include 'previous complaint history' as a matter of discretion, noting this is a matter of discretion for air discharges from waste processes in E14.8.1(12), and that the GPG:Odour recommends the

consideration of previous complaint history as part of an odour assessment for an existing operation.

I recommend the following Precinct provisions relevant to air quality (with changes to the proposed wording underlined and strike-through):

I617.2 Objectives [rp/dp]

1. *The development and continued operation of the Auckland Regional Landfill is enabled, recognising its regional significance as essential infrastructure, and recognising the benefits of biomass being used for renewable energy generation.*
2. *Human health and the environment are ~~is~~ protected from adverse effects of operational or closed landfills.*

...

The overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above, except where there is a conflict, in which case these objectives take precedence.

I617.2 Policies [rp/dp]

1. *Enable the development and continued operation of the Auckland Regional Landfill, and the associated renewable energy generation, including by maintaining adequate separation distances to activities sensitive to air discharges.*
2. *Require that any assessment of environmental effects for an activity that may affect mana whenua values includes an appropriate assessment of adverse effects on those values, and how those effects may be avoided, remedied or mitigated, including through making provision for mana whenua to exercise kaitiakitanga and the adoption of the Auckland Unitary Plan’s Accidental Discovery Rule (E11.6.1).*
3. *Discharges of contaminants into water, land and air from the Auckland Regional Landfill’s construction and operations shall avoid where practicable, and otherwise minimise:*

...

- e. *adverse effects on the quality of air, including from the discharge of contaminants and odour;*

including through the adoption of the best practicable option for the treatment and discharge of stormwater, the use of industry best practice lining and landfill gas control system, adoption of appropriate waste acceptance criteria informed by up-to-date knowledge of contaminants of concern, and the provision of an appropriate buffer within the precinct.

...

7. Discharges of hazardous air pollutants from vehicles accessing the Precinct shall be minimised, including by prioritising the use of rail or zero-emission transport.

The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4).

Table I617.4.1 Activity Table (rp/dp)

Activity		Activity status
New landfills		
(A1)	Landfill in Sub-precinct A	D
(A2)	Discharges to air from landfills in Sub-precinct A	D
...		
(A5)	Discharges to air, land and water from landfills outside of Sub-Precinct A	NC
Existing landfills		
(A6)	Discharges to air from existing landfills in Sub-Precinct A	RD
...		
Renewable energy		
(A11)	Discharges to air, land or water from energy generation from waste biomass, that are otherwise categorised as non-complying	D
General		
...		
(A14)	Except for (A4), (A5) and (A9) above, any activity classified as a non-complying activity elsewhere in the Unitary Plan associated with any landfill activity	D
(A15)	Any landfill activity that does not comply with the restricted discretionary or discretionary activity standards in I617.6	NC
<u>(A16)</u>	<u>Activities sensitive to air discharges</u>	<u>NC</u>

I617.5 Notification

1. Any application for resource consent for an activity listed in Table I617.4.1 Activity table above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991, except where I617.5(2) applies.
2. Any application under Rule I617.4.1 (A1), (A2), (A4), (A5) or (A15) will be publicly notified.

3. When deciding who is an affected person in relation to any activity for the purposes of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I617.6 Standards

I617.6.1 Restricted Discretionary Standards

Activities listed as restricted discretionary activities in Table I617.4.1 must comply with the following restricted discretionary activity standards.

1. The discharge must be associated with an existing, legally authorised landfill or ancillary activity.
2. Any placement of waste shall only occur within Sub-Precinct A, shown on Precinct Plan.
- ...
4. There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of a ~~suitably qualified~~ an enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
- ...
6. The maximum airspace volume of the landfill must not exceed 28.5 Mm³.

I617.6.2 Discretionary Standards

Activities listed as discretionary activities in Table I617.4.1 must comply with the following discretionary activity standards.

1. Any placement of waste shall only occur within Sub-Precinct A, shown on Precinct Plan.
- ...
3. There shall be no offensive or objectionable odour effects beyond at the Precinct boundary caused by the landfilling operation, in the opinion of a ~~suitably qualified~~ an enforcement officer when assessed in accordance with the 'Good Practice Guide for Assessing and Managing Odour', (Ministry for the Environment, 2016).
- ...

I617.8 Assessment – restricted discretionary activities

I617.8.1 Matters of discretion

1. For discharge of contaminants into air from all restricted discretionary activities (A6):

- a. *the matters in Policy E14.3(1); and*
- b. *location of site and activity; and*
- c. *site and plant layout.*
- d. *quantity, quality and type of discharge, including biological contaminants, and any effects arising from that discharge;*
- e. *sensitivity of receiving environment and separation distances between the activity and any sensitive land uses;*
- f. *previous complaint history;*
- g. *protocols for waste acceptance;*
- h. *odour, dust, visible emissions and hazardous air pollutant mitigation measures;*
- i. *monitoring requirements and management plans; and*
- j. *Closure and after-care plans (if the landfill is likely to close within the duration of the consent).*

I617.8.2 Assessment criteria

Discharges to air from legally established landfills

The Council will consider the relevant assessment criteria below for restricted discretionary activities:

1. *The degree to which Auckland Ambient Air Quality Targets are likely to be met where people are likely to be exposed to the specified contaminants for the relevant averaging period.*
2. *Whether the amount of separation between the activity discharging contaminants into air and existing or potential activities sensitive to the air discharges is sufficient to mitigate adverse effects on the environment, health and amenity.*
3. *The extent to which adverse effects are avoided, remedied or mitigated including appropriate emissions control technology and use of management practices.*
4. *Where applicable, the degree to which offsetting can remedy or mitigate adverse effects considering the proximity of the offset to where the effects of the discharge occur and the effective duration of the offset.*
5. *Whether there are practicable location and method options that cause less adverse effects and can still achieve the applicant's objectives.*
6. *The extent to which the odour and dust level meet the expectations for the Medium air quality – dust and odour area (Rural).*

7. *Whether the assessment methods, including monitoring and modelling are appropriate to the scale of the discharge and any potential adverse effects.*
8. *Whether discharge into air are minimised as far as practicable, where appropriate through:*
 - a. *use of best practicable option emissions control and management practices; or*
 - b. *minimisation of fugitive emissions;*
9. *The adequacy of the site management plan including:*
 - a. *operation of the site;*
 - b. *placement and compaction of waste material;*
 - c. *daily operating procedures;*
 - d. *waste acceptance controls and monitoring;*
 - e. *response to natural hazards and unexpected discharges;*
 - f. *Vermin and bird management;*
 - g. *load inspection records; and*
 - h. *monitoring, testing and sampling documentation.*
10. *The adequacy of the site aftercare plan including:*
 - a. *aftercare activities to address the risk posed by the contaminants to the environment; and*
 - b. *timing and standard of aftercare activities.*


6 Definitions

AQR	<i>Auckland Regional Landfill: Air Quality Assessment, Tonkin & Taylor, 30/05/2019</i>
AUP(OP)	Auckland Unitary Plan (operative in part, 19 November 2016)
GPG:Industry	<i>Good Practice Guide for Assessing Discharges to Air from Industry, Ministry for the Environment, 2016</i>
GPG:Odour	<i>Good Practice Guide for Assessing and Managing Odour, Ministry for the Environment, 2016</i>
HRA	<i>Auckland Regional Landfill: Human Health Risk Assessment, Tonkin & Taylor, 20/08/2019</i>
LFG	Landfill gas
NES:AQ	<i>Resource Management (National Environmental Standards for Air Quality) Regulations 2004 and all amendments</i>
NPS:REG	<i>National Policy Statement for Renewable Electricity Generation 2011</i>
PPC	Private Plan Change
RMA	<i>Resource Management Act 1991 and all amendments</i>
WMNZ	Waste Management NZ Limited; the applicant

7 Review

7.1 Memo and technical review prepared by:

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Contamination, Air & Noise | Specialist Unit | Resource Consents

Date:

21 September 2020

7.2 Memo reviewed by:

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Contamination, Air & Noise | Specialist Unit | Resource Consents

Date:

22 September 2020

Consulting Advice Note

Date	21 September 2020
From	Jon Styles
To	Ryan Bradley, Auckland Council
Project	Private Plan Change Request 42- Auckland Regional Landfill (PPC42)
Re	Acoustic review of PPC 42- Auckland Regional Landfill

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1.0 Introduction

Auckland Council has engaged Styles Group to undertake a review of the noise effects associated with private plan change request 42 (**the PPC**) proposed by Waste Management NZ Ltd (**WMNZ**).

The PPC proposes to introduce the “Auckland Regional Landfill Precinct” (the **Precinct**) into the Auckland Unitary Plan – Operative in Part (**AUP**). The Precinct would apply to an area of approximately 1,020ha in the Wayby Valley, currently zoned Rural Production Zone (**RPZ**).

The PPC has been made following lodgement of the resource consent application for the landfill in May 2019. The resource consent application and PPC are both accompanied by the same Assessment of Environmental Noise Effects prepared by Marshall Day Acoustics (**the MDA Report**).

The purpose of the PPC is set out in 3.2 of the PPC request document, as follows:

“To appropriately recognise landfills as infrastructure within the AUP, by identifying a site within Auckland that has been assessed as being suitable for a new landfill, and describing this site through the use of a precinct and managing future effects of activities within the precinct through bespoke objectives, policies and rules;

In anticipation of a landfill being established at the site, providing recognition of the site in the planning framework for the Auckland Region, consistent with the treatment of other large scale infrastructure in the region, and to manage potential future reverse sensitivity effects;

To enable efficient operation of a future landfill at the site throughout its operating life, by targeting future re-consenting requirements to the nature of the discharge and measures to avoid, remedy or mitigate effects”.

The PPC will not authorise any permitted or controlled landfill activities within the Precinct, but instead, sets out the relevant objectives, policies, assessment criteria and matters of discretion for landfills and ancillary activities within the Precinct.

The purpose of this review is not to assess the noise and vibration effects arising from the operation of a new or altered landfill¹, but to determine whether the PPC provides a robust framework for the control and assessment of noise and vibration effects from landfill activities within the Precinct, if the PPC is confirmed.

2.0 The MDA Report

The MDA Report provides an assessment of the noise effects arising from the construction and operation of the landfill under the relevant noise and vibration standards of Chapter E25, including the maximum permitted noise levels for noise generated and received between sites in the RPZ.

This report was prepared primarily to inform the resource consent application, noting that the PPC in itself does not seek to authorise the establishment and operational noise effects of the landfill. My review of the noise and vibration effects associated with the resource consent application is provided under separate cover.

The MDA Report does not discuss or propose an alternative noise framework for the PPC Chapter and states that *“the AUP limits are reasonable and would provide acceptable noise controls for a project of this nature. It is recommended that these be used as the basis for the assessment”*.

3.0 Proposed precinct controls

Appendix A to the PPC Request documents sets out the proposed Precinct chapter provisions.

I have reviewed the proposed provisions to consider the mechanism by which noise and vibration effects from within the Precinct will be managed or assessed under the proposed Precinct Chapter, and/ or the existing provisions of the AUP, if the PPC is confirmed.

3.1 Precinct chapter objectives and policies

The PPC will introduce a new policy framework to the site that will function to “regularise” landfill activities in the Precinct. If the PPC is confirmed, the associated noise effects of landfill operations (including the timing, character and duration of noise arising from landfill operations) will generally be anticipated within the Precinct. They will enable the efficient construction and operation of landfill activities (and otherwise comply with the relevant noise and vibration standards of Chapter E25).

The PPC proposes six objectives and six policies that broadly seek to recognise and provide for landfill operations within the Precinct.

Noise effects (as they may affect human health) could possibly fall under the scope of Objective 2 (*“human health is protected from adverse effects of operational or closed landfills*), but this objective appears to be directed to other effects (such as contamination). Given that the noise

¹ These effects are considered under the resource consent application.

effects arising from the landfill are primarily related to amenity effects on occupants of the surrounding RPZ, the PPC does not contain any objectives or policies that relate to noise.

Notwithstanding, the PPC provisions confirm that the objectives and policies of the RPZ, and Chapter E25 will continue to apply, where there is no conflict between the policy framework of the Precinct chapter. The PPC states:

“The overlay, Auckland-wide and zone objectives and policies apply in the Precinct in addition to those specified above, except where there is a conflict, in which case these objectives take precedence”.

And:

“The underlying zone, Auckland-wide and overlay policies apply in this precinct in addition to those specified above, except where there is a conflict, in which case these policies take precedence. In particular, policy I617.3(3) is intended to take precedence over E13.3(4)”

In terms of noise effects generated from within the Precinct and received in the adjacent RPZ, any resource consent application within the Precinct that exceeds the relevant E25 noise and vibration standards would be subject to the relevant objectives and policies of Chapter E25 and H19 Rural Zones. These chapters contain a robust set of objectives and policies relating to noise, including (but not limited to):

- Objective 3 (H19.4.2) which requires that *“rural character and amenity values of the zone are maintained while anticipating a mix of rural production, non residential and rural lifestyle activities”*.
- Objective 1 of E25.2 which seeks to ensure *“people are protected from unreasonable levels of noise and vibration”*.
- E25.3 Policy 1 – *“Set appropriate noise and vibration standards to reflect each zone’s function and permitted activities, while ensuring that the potential adverse effects of noise and vibration are avoided, remedied or mitigated”*.
- E25.3 Policy 2- *“Minimise, where practicable, noise and vibration at its source or on the site from which it is generated to mitigate adverse effects on adjacent sites”*.
- E25.3 Policy 3- *“Encourage activities to locate in zones where the noise generated is compatible with other activities and, where practicable, adjacent zones”*

As the existing objectives and policies contained within Chapter E25 and H19 are considered to be comprehensive, I do not consider that additional objectives and policies specific to noise effects are necessary in the Precinct Chapter.

However, I note that the administration of proposed Objective 2 (and the requirement for the Precinct objectives and policies to take precedence over other objectives and policies, such as those contained in E25 and H19 where there is conflict) could result in the objectives and policies relating to amenity/ protection of receivers from unreasonable levels of noise being disregarded,

unless the noise effects are of a level demonstrated to result in adverse health effects (in accordance with proposed Objective 2 of the PPC). As the potential noise and vibration effects arising from landfill operations are primarily related to amenity effects on the receivers, I consider that Objective 2 of the PPC should be amended to exclude noise effects or to prescribe the specific health effects it is concerned with, to ensure that there is no interpretation that could elevate this objective to prevail over the relevant amenity objectives within H19 and E25 that relate to noise effects on receivers.

3.2 Activity table

The Precinct chapter includes an activity table setting out the activity status for activity status for landfill activities within the Precinct. Under the proposed Precinct activity table, a resource consent process is required to authorise any new or altered landfill, with a discretionary activity status afforded to new landfills in Sub-precinct A, and a non-complying activity status afforded to any landfill outside of sub-precinct A. Activities including renewable energy generation and the bin exchange area are discretionary activities. There are no permitted or controlled activities relating to new or existing landfill activities.

The guidance note which accompanies Table 1617.4 confirms that:

“Any reference to an activity includes its construction, operation and maintenance. The provisions in any relevant overlays, Auckland-wide provisions and the zones apply in this precinct unless otherwise specified below”².

Operational noise effects within the Precinct will continue to be controlled by the relevant E25 standard (E25.6.3) applying to noise levels generated and received within the RPZ; and noise and vibration from other activities (such as construction noise, vibration and blasting) will continue to be controlled by the relevant district wide E25 standards.

Operational noise from the Precinct and received at any other site will continue to be controlled by the maximum permitted noise levels authorised by E25.6.3 *Noise levels in rural and future urban zones*. This standard is reproduced below:

- (1) The noise (rating) level from any activity in the Rural – Mixed Rural Zone, Rural – Rural Production Zone, Rural – Rural Coastal Zone or the Future Urban Zone measured within the notional boundary on any site in any rural zone must not exceed the limits in Table E25.6.3.1 Noise levels in the Rural – Mixed Rural Zone, Rural – Rural Production Zone, Rural – Rural Coastal Zone or the Future Urban Zone below:

Table E25.6.3.1 Noise levels in the Rural – Mixed Rural Zone, Rural – Rural Production Zone, Rural – Rural Coastal Zone or the Future Urban Zone

Time	Noise Level
Monday to Saturday 7am - 10pm	55dB L _{Aeq}
Sunday 9am – 6pm	

² The footnote in the PPC identifies the specific rules the activity table seeks to replace, none of which relate to noise.

At all other times	45dB L _{Aeq} 75dB L _{AFmax}
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The maximum permitted noise levels authorised between sites in the RPZ are at the top end of the range of noise limits acceptable for residential activity, including in a rural zone. If the maximum permitted noise levels were any higher, dwellings would need to acoustically insulated and outdoor amenity would be seriously eroded. I would not support any increase to these noise levels.

The noise limits for the RPZ are set at the top end of the range of acceptable noise limits for residential use to provide an environment where noise generating activities are afforded maximum flexibility whilst remaining compatible with residential activity. Residential amenity is low, but acceptable. In accordance with Policy H19.2.4(2), the typical features of the RPZ include noise associated with the use of land for farming, horticulture, forestry, mineral extraction and clean / managed fills.

The maximum permitted noise levels authorised within the RPZ are very relevant, however the character and nature of the noise are also important factors. Whilst many rural zones only anticipate traditional seasonal and intermittent rural noise sources, the RPZ anticipates a wide range of rural production, rural industry and rural commercial activities, many of which generate noise on a constant basis.

It is generally accepted that rural industries and activities have a functional need to locate in the RPZ. However, to control the potential effects arising from the intensity and scale of these activities, the Rural Zone activity table specifies that resource consent is required to enable the specific effects of these activities to be considered on a case by case basis. For example, clean fills and managed fills are afforded a Discretionary Activity status in the RPZ³, while landfills are non-complying. A discretionary / non-complying resource consent application facilitates the noise and vibration effects of large scale rural activities / industries to be assessed and considered on a case by case basis through the resource consent process, in the context of the specific receiving environment.

If the PPC is confirmed, the Precinct activity table confirms that a discretionary activity status will apply to landfills in Sub-precinct A, with ancillary activities such as the bin exchange area also subject to a discretionary activity status. The discretionary activity status will enable a comprehensive assessment of the noise effects on the receiving environment, with reference to the maximum permitted noise levels anticipated and provided for in the RPZ.

I consider that maintaining the maximum permitted noise levels for the RPZ is appropriate. Furthermore, that the specified activity statuses in the Precinct Activity Table will facilitate a robust assessment of the actual and potential noise effects of landfill operations in the resource consent process, including the noise effects received in the adjacent RPZ.

In terms of noise effects within the Precinct, I note that Table 1617.4 does not preclude Activities Sensitive to Noise (as defined in Chapter J1) within the Precinct. The RPZ provisions permit these activities (in various forms). My view is that noise sensitive activities are very likely to be

³ And the Mixed Rural Zone and Rural Coastal Zone

incompatible with activities provided for in the Precinct, and should be discouraged. This could be achieved by applying a non-complying activity status to Activities Sensitive to Noise in the Precinct activity table.

3.3 Standards

1617.6 *Standards* of the PPC provides a set of standards that all activities listed as restricted discretionary or discretionary must comply with. These standards primarily relate to management of discharges. There are no specific standards under 1617.6 relating to noise effects.

If the PPC is confirmed, any application for resource consent would continue to be assessed against the relevant standards in Chapter E25.

3.4 Assessment criteria and matters of discretion

There are no specific assessment criteria or matters of discretion relating to noise and vibration effects in the Precinct Chapter.

As the underlying noise limits for the Rural Production Zone and district wide noise and vibration standards of E25 will apply to the Precinct, a resource consent application exceeding these standards would also be subject to Chapter E25's comprehensive assessment criteria and matters of discretion. The matters of discretion/ assessment criteria require consideration of:

- The noise / vibration effects on adjacent land uses particularly activities sensitive to noise;
- Measures to avoid, remedy or mitigate the adverse effects of noise.
- Whether activities can be managed so that they do not generate unreasonable noise and vibration levels on adjacent land uses particularly activities sensitive to noise;
- The extent to which the noise or vibration generated by the activity will occur at times when disturbance to sleep can be avoided or minimised; will be compatible with activities occurring or allowed to occur in the surrounding area; will be limited in duration, or frequency or by hours of operation; or will exceed the existing background noise and vibration levels in that environment and the reasonableness of the cumulative levels.

As Chapter E25 contains a comprehensive and robust set of assessment criteria and matters of discretion to guide the consideration of construction and operational noise and vibration effects from the Precinct and received in the adjacent RPZ, I am satisfied that no additional noise related assessment criteria or matters of discretion are necessary within the Precinct chapter.

Submissions

I have reviewed the submissions on the PPC as they relate to noise and vibration effects. The issues raised in the submissions broadly relate to:

- Construction and operational noise effects on the amenity of adjacent sites, including nearby recreation areas
- General concerns relating to the overall level and frequency of landfill noise effects

- Increase in traffic through Dome Valley (and associated noise effects).
- Location of the bin exchange (whether an alternative location would reduce noise to receivers)

The PPC in itself will not authorise any permitted or controlled activities landfill within the Precinct. As the concerns raised in the submissions primarily relate to the effects arising from the construction and operation of the landfill, the concerns raised in the submissions primarily fall under the scope of the resource consent process. My review of the noise effects arising from the resource consent application to construct and operate the landfill is provided under separate cover.

I have not identified any submissions that raise specific concerns relating to the adequacy or appropriateness of the existing AUP noise management framework to manage the actual/ potential noise effects arising from activities within the Precinct

Noise effects beyond the PPC boundaries

As demonstrated in the noise level contour plans attached to the MDA Report at its Appendix G, the noise level contours corresponding to the relevant noise limits fall mostly within the boundaries of the Site. However, there are some areas where the noise contours corresponding to the maximum permitted noise levels in E25 extend beyond the Site's own boundaries and onto neighbouring land. A clear example is around the Bin Exchange area. Using Scenario 6 in Appendix G of the MDA Report as an example, the noise level contours near the Bin Exchange area extend westwards across SH1 and onto neighbouring land. This includes the orange 45dB L_{Aeq} contour that extends several hundred metres into the properties to the west.

The MDA Report notes that there are no activities sensitive to noise in the area encompassed by the 45dB L_{Aeq} noise level contour, so there is no infringement of the permitted standards in E25. I agree that this is currently the case.

Ordinarily, an activity that has effects extending beyond its own boundaries could be vulnerable to encroachment, where an activity sensitive to noise is established after consent is granted and in an area exposed to noise levels above those permitted by the resource consent or AUP rule. The MDA Report proposes to limit this vulnerability by including a 'date stamp' approach in the noise limit conditions. Proposed condition 131 states (emphasis added):

Any noise emitted from activities authorised by this consent shall comply with the following noise limits at the notional boundary of any dwelling existing as at the date of granting consent (excluding any houses on land owned by the consent holder)

This date stamp qualifier means that the proposal will not have to comply with any noise limit at any activity sensitive to noise that is established in the future, including any activity sensitive to noise which may locate on land that is exposed to noise levels above the maximum permitted noise levels in E25. Although this qualifier has been suggested as part of a resource consent condition, (and does therefore form part of the PC), I have commented on it as there are possible implications for the PC.

The date stamp approach allows the applicant to extend its noise effects beyond its own boundaries, using neighbouring land as a buffer and potentially limiting the ability to develop the neighbouring land in a way that is provided for by the RPZ provisions.

I consider that the suggestion of fixing the compliance point to be the dwellings at the date the consent is granted would be inappropriate and a very poor substitute for best practice. There are many problems with this approach in principle, as follows:

1. Between now and when consent is granted, some dwellings may come and some may go. The compliance positions are therefore quite arbitrary;
2. The approach allows the landfill to externalise its effects and use the neighbouring land as a buffer zone. The noise emissions over the neighbouring land could be relatively high, and the noise effects on the intervening land are not known or described, resulting in potential significant limitations on the ability to develop that land in the way that the RPZ provisions intend.
3. The proposed conditions simply require compliance with a night time noise limit of 45dB L_{Aeq} . The compliance point nearest to the Bin Exchange Area is some distance away (House 29) and the 'worst-case' night time noise level prediction at this property is 42dB L_{Aeq} . According to the proposed conditions, noise levels could be up to 3dB higher than that predicted and still comply with the proposed conditions. If this was to eventuate, the 45dB L_{Aeq} noise level contour could easily extend over even more of the neighbouring land, further limiting its development potential.
4. The ways in which the neighbouring land might be developed in a way that would have regard to the higher noise levels is uncontrolled by the applicant's approach or the AUP. The applicant's approach relies on the owners / occupiers of the neighbouring land to know about the qualifier in the consent condition that fixes the compliance point in location and time. In my experience, it is quite common for development to occur in such circumstances without the owner / developer or the Council being aware of the potential noise issues on the land. The issue does not often become apparent until sometime after a new dwelling is occupied and there is a noise complaint. Whilst the noise maker might be protected from any action by its fixed compliance point (beyond the new dwelling) the owner of the new dwelling will in my experience be aggrieved. Whilst I accept that proper due diligence may avoid this issue, the fact is that the issue still arises, and more often than it should. I consider that it results in a very inefficient and unclear planning framework that does not properly manage development on the intervening land.

In my view, there are other far more effective and efficient methods of providing the protection that the date stamp approach seeks. One of the most common and robust methods of protecting noise makers from encroachment is to provide a noise control boundary. This is essentially a line on the planning maps that surrounds the landfill site, within which a set of planning controls apply to manage the compatibility issues. The land within the noise control boundary can be developed appropriately if the effects are known, and land use planning controls can be drafted to support this.

This approach is very widely used in modern district plans for a large variety of land uses, including ports, airports, road and rail infrastructure, quarries, industrial areas and motorsports activities. There are many examples of noise control boundaries around industrial areas in New Zealand District Plans. They have been developed to provide methods for managing different land uses in a controlled and efficient manner using the noise control boundary concept, recognising that the noise making activities they deal with would often be classified as regionally or nationally significant.

I note that this approach has not been sought in Proposed Plan Change 42.

Conclusion

Styles Group have reviewed the PPC for the Auckland Regional Landfill Precinct, located within the RPZ.

The proposed Precinct Chapter confirms that noise and vibration effects from the precinct will be controlled by the existing Chapter E25 noise and vibration standards. Operational noise levels generated within the Precinct and received at any other site will continue to be assessed against the underlying RPZ maximum permitted noise levels. I consider that the Chapter E25 standards are appropriate to control the range of potential effects of landfill activities within the Precinct. I have not recommended any amendments to the Precinct Chapter that would supersede the existing noise management framework applying between the Precinct and the surrounding sites, including the maximum permitted noise levels authorised in the RPZ.

If confirmed, the PPC will maintain the existing regulatory noise environment that the site and receiving environment is currently subject to. However, the confirmation of the PPC will introduce a policy framework that anticipates and provides for landfill activities within the Precinct. In terms of the potential noise effects received beyond the Precinct, the objectives and policies of Chapter E25 and H19 will remain applicable where there is no conflict with the Precinct objectives and policies. I consider it important that there are no objectives and policies within the Precinct Chapter that would be interpreted to prevail over the objectives and policies in Chapter E25 and H19. These include those objectives and policies encouraging internalisation of noise effects, protecting receivers from unreasonable levels of noise and vibration (particularly at night), and generally relating to the level of noise amenity anticipated and provided for within the RPZ.

Currently, landfills within the RPZ are subject to a non-complying activity status. The PPC will apply a discretionary activity status to new landfills in Sub-precinct A. The discretionary activity status will continue to afford a comprehensive assessment of the specific noise and vibration effects that may be received beyond the Precinct, taking into account the proposed site layout, the operation and any mitigation and management measures. I consider that the resource consent process is the appropriate forum for the specific noise and vibration effects to be considered on a case by case basis.

In terms of noise effects within the Precinct, I note that Table 1617.4 does not preclude Activities Sensitive to Noise (as defined in Chapter J1) within the Precinct. The RPZ provisions permit these activities (in various forms). My view is that noise sensitive activities are very likely to be incompatible with activities provided for in the Precinct, and should be discouraged. This could be

achieved by applying a non-complying activity status to Activities Sensitive to Noise in the Precinct activity table.

Generally, I am satisfied that Chapter E25 (including objectives, policies, assessment criteria and matters of discretion) will provide an appropriate framework for the control, assessment and consideration of noise effects arising from activities within the Precinct, as received in the adjacent Rural Production Zone.

Please contact me if you require any further information.

Yours sincerely,



Jon Styles, MASNZ
Director and Principal

Memo (technical specialist report to contribute towards Council's section 42A hearing report)

22 September 2020

To: Ryan Bradley

From: Sharon Tang, Senior Specialist Environmental Health, Specialist Unit, Resource Consents

Subject: 1232 State Highway 1 – Wayby Valley and part of Mahurangi Forest, Mahurangi – Proposed Auckland Regional Landfill (ARL)
Health risk assessment - D.002193.02

1. Qualification and Experience

1.1 My full name is Sharon Tang. I hold a Bachelor of Medicine from West China University of Medical Science; Post Graduate Diploma – Environmental Health Sciences from Massey University; and Master of Public Health from University of Auckland. I have 32-years of work experience both overseas and in New Zealand in environmental science and public health fields, with particular expertise in water and wastewater quality, contaminated land, hazardous substances and health risk assessment.

1.2 I am currently a Senior Specialist in the Specialist Unit, Resource Consent Department of Auckland Council. I have been working at Auckland Council since 2000 and have been involved in providing specialist input into resource/building consents, notices of requirement, outline plan of works and plan changes in the areas of ground contamination, water quality, hazardous substances and health risk assessment for 11 years. I have also been involved in providing technical and policy advice, input into statutory/non-statutory processes and guidelines in my expertise areas.

1.3 I have been involved in the review and assessment of numerous applications and post consent reports relating to soil and water contamination investigations; asbestos contamination; health risk assessment relating to recreational and drinking water, ground gas, and hazardous substances; remediation and site management of contaminated land, and site validations following remediation works undertaken.

2. Scope of review

2.1 This memorandum is to set out my reply to the review of the documents outlined below. I understand there are some overlaps with my colleagues and external consultants, who are reviewing the environmental effects of this application. To avoid duplications, this assessment has a focus on human health risk assessment for the proposed land use change from Rural Production to Auckland Regional Landfill. It intends to assess the Human Health Risk Assessment ('HHRA') report from the applicant, submissions on proposed private plan change 42 – Auckland Regional Landfill: Wayby Valley ('PPC'), and make a recommendation on the PPC in relation to human health effects.

2.2 Initially, the only two reports lodged in relation to human health risk were:

- *Auckland Regional Landfill Private Plan Change Request – Assessment of Effects and Section 32 Analysis (T+T, version 2, February 2020) (Evaluation report for notification) (PPC report)*
- *Selection Process-Auckland Regional Landfill (T+T, May 2019)*

The below Human Health Risk Assessment ('HHRA') report and further information were reviewed following a further information request pursuant to Clause 23 of Schedule 1 of the Resource Management Act ('RMA'):

- *Human Health Risk Assessment - Auckland Regional Landfill (T+T, August 2019) (HHRA)*
- *Clause 23 Response: Auckland Regional Landfill - Private Plan Change (T+T, 15 November 2019) Site*
- *Auckland Regional Landfill s92 response – Tranche 3 (T+T, 20 December 2019)*
- *Sediment, Stormwater, Waste Acceptance Criteria and Health Risk Assessment Additional s92 Responses (T+T, 14 August 2020)*
- *Further Stormwater and Health Risk Assessment s92 Responses (T+T, 25 August 2020)*

I have also read the following reports referred to in the PPC or HHRA reports (or in both):

- *Assessment of Environmental Effects - Auckland Regional Landfill (T+T, May 2019) (AEE)*
- *Stormwater and Industrial and Trade Activity - Auckland Regional Landfill (T+T, May 2019) (SITAR) (Technical Report P)*
- *Hydrogeological Assessment - Auckland Regional Landfill (T+T, May 2019) (Technical Report E)*
- *Assessment of Aquatic and Terrestrial Ecological Values and Effects - Auckland Regional Landfill (T+T, May 2019) (Technical Report G)*
- *Water Quality Baseline Monitoring Report - Auckland Regional Landfill (T+T, May 2019) (Technical Report F)*
- *The Risk Management Assessment (Technical Report S)*
- *Draft Landfill management Plan included in Appendix A of Auckland Regional Landfill s92 response – Tranche 5 (T+T, 20 February 2020)*

2.3 The memorandum does not include evaluation of the following information in the HHRA report, which are assessed by other specialists:

- Waste acceptance criteria
- Landfill gas
- Toxicity assessment

3. Proposal

Private Plan Change (PPC)

3.1 The details of the proposal are contained in the Auckland Regional Landfill Private Plan Change Request – Assessment of Effects and Section 32 Analysis (T+T, version 2, February 2020) (PPC report).

In brief, Waste Management NZ Ltd ('WMNZ') seeks a private plan change ('PPC') of its approximately 1,020 ha landholding in Wayby Valley to introduce a new precinct – the Auckland Regional Landfill Precinct ('ARL Precinct') into the Auckland Unitary Plan (Operative in Part) ('AUP OP') over an underlying Rural Production Zone. The ARL Precinct is proposed to contain two sub-precincts: Sub-precinct A: where waste will be placed within the landfill; Sub-precinct B: where works will be carried out within the Natural Stream Management Area ('NSMA'). Parts of the remaining land within the ARL Precinct will be used for activities associated with landfill operation and energy generation such as a bin exchange area, stormwater treatment devices, access roads, soil stockpiles, gas and leachate collection and treatment, and clay borrow.

3.2 New objectives, policies and provisions specific to the ARL Precinct are introduced and the following is noted:

- The new objectives and policies proposed are to manage effects to the extent practicable as compared to those in Chapter E13 of the AUP OP which seek to avoid significant adverse effects, avoid adverse effects from new landfills and remedy or mitigate other adverse effects on water sources.
- Discretionary activity status is proposed for new landfills and ancillary activities, and discharges to air, land and water within Sub-precinct A as compared to the current non-complying activity status under Chapter E13. Outside of Sub-precinct A the above activities remain non-complying.
- Restricted discretionary activity is proposed for discharges from existing, authorised landfill as compared to discretionary activity in Chapter E13 of the AUP OP.

- Mandatory public notification is provided when applications for construction, operation of landfills, discharges to air from new landfills, and any landfill activities do not comply with the standards in the ARL Precinct.
- Standards are proposed for restricted discretionary and discretionary activities including limiting the placement of waste to Sub-precinct A (maximum airspace volume - 28.5 Mm³), requiring installation of an appropriate lining system, requiring no offensive or objectionable odour at the ARL Precinct boundary, restriction of works within wetland management area or significant ecological area or NSMA overlays (except for Sub-precinct B).
- Activities, which do not comply with the standards, will be non-complying.

3.3 The applicant states that the precinct provisions do not replace water quality rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33, or for erosion and sediment control in Chapters E11 and E12.

ARL resource consent relevant to this PPC memo (LUC60339672)

3.4 A resource consent application for the Auckland Regional Landfill (ARL) is currently being assessed in parallel with this PPC application and a combined hearing process for both the PPC and resource consent application will occur in November 2020. The resource consent application for the ARL is considered relevant to this PPC request since the PPC report relies on part on the ARL consent application documents for its assessment of environmental effects.

3.5 The details of the ARL proposal are contained in the *Assessment of Environmental Effects - Auckland Regional Landfill (T+T, May 2019) (AEE)* and the *Stormwater and Industrial and Trade Activity - Auckland Regional Landfill (T+T, May 2019) (SITAR)*.

3.6 In brief, the resource consent application for the ARL relates to establishing and operating a 25 Mm³ Class 1 municipal solid waste landfill facility for a period in excess of 35 years with a landfill footprint itself occupying approximately 60ha in Valley 1 (in the Eastern Block). An access road and bin exchange park are proposed in the Southern Block within the WMNZ landholdings in Wayby Valley. This new facility intends to replace the Redvale Landfill, which has almost reached its landfill capacity. The proposed ARL also includes a leachate management system including leachate storage, tanker loading facilities, leachate treatment facilities, landfill gas ('LFG') treatment by flare and LFG to energy plant; bin exchange area near site entrance where road vehicles deposit waste bins, vehicle wheel wash, maintenance facilities for site plant and equipment including storage of hazardous substances, waste oil tanks, and dangerous goods stores.

The proposed ARL is located within the proposed Sub-precinct A of the PPC request.

4. Site description and the surrounding environment and baseline water quality

4.1 The details of the site description and the surrounding environment is contained in the *Assessment of Effects and Section 32 Analysis (T+T, version 2, February 2020) ('PPC report')* and the *Hydrogeology Assessment, the Baseline Monitoring Report (Technical Report F, Volume 2)* and the *Ecological Report (Technical Report G)*. The water quality of the Hōteu River is documented in *State of the Environment Monitoring: River Water Quality Annual Report 2017 (Buckthought, L. E. 2019)* and on the Land, Air, Water Aotearoa ('LAWA') website (<https://www.lawa.org.nz/explore-data/auckland-region/river-quality/>).

The following is noted:

4.2 The proposed ARL Precinct is zoned Rural Production in the AUP OP. It is located approximately 3.5km southeast of Wellsford, with a population of approximately 2,000 residents and 13 km northwest of Warkworth, where the current population of approximately 6,000 is anticipated to grow to around 25,000–

30,000 over the next three decades. The proposed Sub-Precinct A footprint is within the eastern area of the site where a number of gullies are present.

- 4.3 Beyond the proposed ARL Precinct comprises of a mixture of terrain and land use including pastoral farmland of Springhill Farm with an existing dwelling as well as farm utility buildings and sheds in the Western Block and plantation forestry in the Eastern Block and part of the Waiteraire Tributary Block. It contains a number of intermittent and permanent streams and tributaries including the Waiwhiu Stream and Waiteraire Stream, which discharge into a number of tributaries flowing towards the north-west into the Hōteō River and ultimately into the Kaipara Harbour, a key snapper fish breeding ground. The ARL Precinct is approximately mid-way down the Hōteō River and the proposed footprint of Sub-Precinct A is bounded by native forest in the Sunnybrook Scenic Reserve in the south.
- 4.4 The proposed ARL Precinct to the northeast, east and south is dominated by plantation forestry, and to the west and north-west are predominantly agricultural activities including dairy, beef and sheep farms, lifestyle blocks, and a number of small businesses. Native bush is present within the wider area, including the Sunnybrook Scenic Reserve and the Dome Forest Stewardship Area.
- 4.5 Groundwater is encountered at significant depth beneath the proposed Sub-precinct A, separated from shallow groundwater by low permeability unweathered bed rock. The Baseline Monitoring Report shows that groundwater within the WMNZ landholdings is generally free from contamination with total iron and total manganese concentrations exceeding aesthetic drinking water standards. The sample of regional aquifer tested (TB01) records exceedances of aesthetic guideline values (turbidity and iron) in the *Drinking-water Standards for New Zealand 2005 (revised 2018) (MoH, 2018)*. The stream water quality is recorded as excellent within the WMNZ landholdings.
- 4.6 The Ecological report shows that the stream systems within the proposed precinct location have high ecological value. Native fish including longfin eel, and shortfin eels, banded kōkapu, inanga, various bullies, koura, freshwater mussels and shrimps are reported to be present within the catchment.
- 4.7 Watercare uses the Hōteō River upstream of the WMNZ landholdings at 362 Wayby Valley Road, approximately 1.95km from the proposed precinct, to supply potable water for Wellsford. The Hōteō River has major cultural, spiritual and historic significance to local iwi.
- 4.8 Information on the LAWA website shows that the Hōteō River, as part of Auckland Council's routine monitoring sites, has a catchment of 26,730 hectares with predominantly rural land uses. The median *Escherichia coli* (*E. coli*) count at the Hōteō River (Gubbs site) is 116 *E.coli*/100ml over a 2014 to 2018 monitoring period. The *State of the Environment report (Buckthought, L. E. 2019)* shows that the water quality in the Hōteō River was reported by Auckland Council as 'good' in 2016, and 'poor' in 2017 due to increased phosphorus levels measured in the river. *E. coli* counts over 2017 range from 56 -5172 cfu/100ml with a median concentration of 144 cfu/100ml.
- 4.9 The meteorological data from Auckland Council (Mahurangi Mews) and NIWA indicates that the Wayby Valley has the highest annual rainfall in the Auckland Region with greater peak intensities and longer durations compared to other areas in the Auckland region. The Hydrogeology Assessment states that the regional aquifer is expected to receive less recharge from rainfall since the topography and low infiltration capacity of the soils promote high surface runoff. There is existing flooding within the Hōteō catchment that at times restricts access to properties.

5. Regulatory requirements and guidelines for health risk assessment

- 5.1 A request for private plan change (PPC) is required under Clause 21 of Schedule 1 to explain the purpose of, and reasons for, the proposed plan change. When environmental effects are anticipated, the request shall describe those effects by taking into account clauses 6 and 7 of the new Schedule 4 set out in Schedule 1 pursuant to Clause 22 (2) of Schedule 1. When the PPC relates only to a change of the

objectives, policies and/or provisions of the AUP OP, the assessment of the environmental effects is limited to any effects arising from the amendments to the planning objectives, policies and/or provisions. However, if a PPC also involves a significant change of the land use of a specific area, it is considered that the assessment of any environment effects arising from the land use change should be undertaken as if the proposed land use is present so as to ensure the suitability of the site for the proposed land use change is appropriately assessed.

- 5.2 The nature of land use for a landfill is significantly different to that of the existing rural production and forestry. Environmental effects are anticipated due to the potential new contaminant sources which would be generated from future landfill operations. Although the PPC does not authorise any activities, the assessment of the site suitability for a landfill development needs to take into account the environmental consequences arising from a landfill development at this particular location pursuant to Clause 22 (2) of Schedule 1 *‘in such detail as corresponds with the scale and significance of the actual or potential environmental effects anticipated from the implementation of the change, policy statement, or plan’*.
- 5.3 The RMA acknowledges that people and communities are part of the environment in addition to the natural environment (based on the definition of ‘environment’). Therefore, when resource management decisions are made, consideration of the potential effects of activities on the environment should also include, amongst other things, the likelihood of effects on people’s health, safety and general wellbeing in the community. For a PPC request such as this involving potential various contaminants on a large scale, a separate Health Impact Assessment or a Human Health Risk Assessment (‘HHRA’) report should be prepared.
- 5.4 The fundamental health risk assessment includes hazards identification, exposure and effect assessment, and risk characterisation. Over time, risk assessment has shifted from evaluating relationships between exposure to a single chemical and an adverse health effect to a cumulative risk assessment, which is defined as the combined risks from aggregate exposures to multiple agents or stressors (EPA, 2003). The harmonization of approaches to the assessment of risk from exposure to chemicals is facilitated by the World Health Organization (‘WHO’), who in conjunction with other organizations developed a framework for the risk assessment of combined exposures to multiple chemicals (WHO, 2009).
- 5.5 The evaluation report pursuant to Clause 22 of Schedule 1 and Section 32 is required to ensure the objectives and provisions of the proposal are the most appropriate way to achieve the purpose of the RMA and the objectives of the proposal respectively. The report should also identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions.
- 5.6 *National Environmental Standards for Freshwater 2020 (‘NES-Freshwater’)* and *National Policy Statement for Freshwater Management 2020 (‘NPS-FM 2020’)* replaced the National Policy Statement for Freshwater Management 2014 (amended 2017) on 3 September 2020. The NPS-FM 2020 requires regional councils to carry out their responsibilities under the Resource Management Act 1991, in consultation with its community to develop a plan for maintaining or improving the state of freshwater in their regions. The aim is to stop further degradation of New Zealand’s freshwater resources, maintain and improve freshwater quality. Some of the key requirements in the NPS-FM 2020 are to:
- manage freshwater working with tangata whenua and communities prioritising the health and wellbeing of water bodies, the essential needs of people, followed by other uses;
 - improve degraded water bodies and maintain or improve all others using baselines defined in the NPS;
 - avoid further degradation of streams;
 - Join ecosystem health including fish and human health for recreation as compulsory values.
(<https://www.mfe.govt.nz/fresh-water/national-policy-statement/about-nps>)

5.7 The purpose of Part 2 of the Drinking Water of the Health Act (1956) is to protect the health and safety of people and communities by promoting adequate supplies of safe and wholesome drinking water from all drinking-water supplies. Every drinking-water supplier must take reasonable steps to protect from contamination all raw water used by that drinking-water supplier (Section 69U (1) (b)).

5.8 *The Drinking Water Standards for New Zealand (MoH, revised 2018)* set up maximum acceptable values for microbial determinands and inorganic determinands of health significance.

6. Summary of Assessment of Effects and Section 32 Analysis (PPC report)

6.1 The purpose of the PPC is to identify a site within Auckland that has been assessed by the applicant as being suitable for a new landfill and to create a new precinct for a future municipal solid waste landfill (Auckland Regional Landfill) being established at the site, to support the development and efficient on-going operation of the landfill.

6.2 The AUP OP recognises municipal landfills as infrastructure in its definitions (Chapter J). The PPC report considered that classifying any new landfills as non-complying in the current version of the AUP is inconsistent with this recognition and landfills are required to deal with waste generated to support the functioning and growth of Auckland.

6.3 The PPC report assessed Clause 22 of Schedule 1 and indicated that environmental effects are anticipated from the PPC. It stated that the PPC was not authorising any works and the only change was to re-classify certain activities from non-complying, to either discretionary or restricted discretionary, and to insert specific objectives and policies relating to activities proposed within the precinct. It therefore considered that the assessment of environmental effects ('AEE') should only be limited to any effects arising from the amendments to the planning provisions proposed by this PPC request. The PPC report considered there would be no additional effects arising from the PPC that would not have arisen under the AUP OP as it exists. It, therefore, considered that the AEE should focus on the planning implications of the changed activity status, and in particular whether the proposed precinct is in an appropriate location.

6.4 The Site Selection Report ('SSR') (Appendix D) of the PPC report showed that an extensive site selection process commenced from 2007 and the primary siting constraint was given to site access from a primary regional haul route. The weight for scoring and ranking the candidate sites was then given (from more to less weighting) for buffer availability (both internal and external), the site size (landfill development potential), land availability, AUP OP plan constraints, such as proximity to or impingement on known sites of cultural significance, outstanding natural landscapes, Significant Ecological Areas ('SEAs') and watercourses. Technical attributes such as geology, hydrogeology and topography were given a lower weighting as it was considered that technical deficiencies in a site could often be dealt with through engineering. The SSR stated that none of the sites considered in the selection process had ideal hydrogeological/geological suitability but the Wayby Valley had conditions, which were able to be addressed through additional engineering controls.

6.5 The PPC report showed that Wayby Valley site was considered to be the most appropriate for landfill development subject to design and construction methods due to:

- its proximity to central Auckland and to the state highway for suitable access;
- availability of buffer to sensitive receptors and large enough for landfill development;
- absence of sites of identified cultural significance, SEAs and other identified features in the AUP (or PAUP as it was then);
- appropriate underlying geology with conditions which could be addressed through additional engineering; and
- limited number of land owners.

No details were provided in the report regarding the ranking and scores for each of the selection criteria for the candidate sites to support the conclusion due to commercial sensitivity and the potential impact on landowners and communities where other sites for a landfill were being considered.

6.6 The AEE included in Section 4 of the PPC comprised of the following aspects and assessment conclusions, which were relevant to human health effects:

- Manage reverse sensitivity effects – A large area of land was secured for the ARL Precinct, enabling a large buffer to surround the landfill, which would manage reverse sensitivity effects to a large extent where possible. Acknowledging the presence of the precinct as Auckland Regional Landfill in the AUP OP planning maps would allow future landowners to make informed decisions about potential land use and development.
- Underlying geology - Geological Investigation Report (Technical Report B) and the Seismic Hazard Assessment (Technical Report C) confirmed that the underlying geology within Sub-Precinct A was suitable for landfill development. The low permeability soils, and fractured bedrock combined with some additional engineering controls would provide good containment of any leachate.
- Air quality effects in terms of amenity effects associated with odour and dust and health effects from landfill gas - Given the large separation distances and the underlying Rural Production zoning, air quality effects could be addressed through a resource consent process. WMNZ state if any land within the precinct was to be sold they would require a covenant to be placed upon the title, as well as an easement relating to the generation of nuisance effects to protect their buffer from sensitive uses.
- Potential effects on groundwater quality – Investigations showed that the regional groundwater was located at a significant depth below the WMNZ landholdings, separated from shallow groundwater by low permeability unweathered bed rock. The effects would be largely avoided by an appropriate landfill lining system, which would capture the leachate, and the nature and extent of contaminants in leachate could be controlled through waste acceptance criteria. The lining system design and waste acceptance criteria would be considered through a resource consent process.
- Flooding – The total ARL Precinct represented a small proportion of the Hōteu catchment. The potential effects of flooding could be appropriately assessed through a resource consent process based on the landfill design including stormwater detention.
- Effects on surface water systems including potential changes in water quality and effects on freshwater fauna – The applicant states that the precinct provisions do not replace the rules or assessment criteria for stormwater discharges in E7, E8, E9, E10 and E33. As the precinct does not establish alternative controls for activities within the precinct, any proposed landfill in the precinct would be subject to the water quality controls in the wider AUP OP. The PPC report considered that the proposed precinct provisions would provide for an appropriate assessment through the resource consent process, with a higher level of protection for high value streams, and with policies requiring effects to be avoided, remedied or mitigated, or when significant effects are unavoidable, offset or compensated.

6.7 The PPC report showed that public consultation was undertaken and concerns regarding freshwater quality and effects on the Kaipara Harbour were raised.

6.8 The PPC report stated that the PPC did not have any interim effect nor affect the outcome of the resource consent application, where detailed effect assessment of the design and operation of the landfill will be provided. Notwithstanding that, the PPC report referred to some of the findings of the technical reports

prepared for the resource consent application and drew conclusions based on that information. The PPC report considered that WMNZ's long term proposed use of the site is transparent by applying for both a PPC and resource consents in parallel and the PPC was consistent with the purpose and principles of Part 5 of the RMA. The report concluded that the proposed ARL Precinct would have no level of potential adverse effects which would make the site unsuitable for a landfill development.

7. Issues raised pursuant to Clause 23 of Schedule 1 and response

- 7.1 It is commonly known that landfills pose a potential risk to human health and the surrounding environment due to potential contamination of the water, air and land from leachate, surface runoff and landfill gas, etc. Therefore, landfill site selection should be carried out with great care to ensure any potential adverse effects on human health and the environment are appropriately evaluated. Although the PPC does not authorise landfill activities, by setting up a planning framework for a future landfill development on the site, in addition to considerations of engineering and economic matters, it should be demonstrated that any potential environmental effects including health risks arising from a future landfill development on the subject site can be avoided, remedied and mitigated with sufficient supportive evidences so as to achieve the purpose of the RMA.
- 7.2 As discussed in Section 5 of this memorandum, the PPC not only includes changing the objectives, policies and provisions of the AUP OP but it would also provide a consenting pathway to significantly change the long-term land use of the subject site from farming and forestry activities to a municipal landfill. It is considered that the required AEE should also include assessment of any effects (including those on human health) from a future landfill development at this subject location so that the suitability of the site for a landfill development can be appropriately evaluated. Information on the proposed Precinct layout, associated activities and the common knowledge of a landfill design and the potential hazards, enable a risk assessment to be undertaken should a resource consent application not be undertaken in parallel. For a significant PPC request such as this, a holistic approach for health risk assessment is considered necessary to better understand the potential hazards likely arising from a landfill, the sensitive receptors in the surrounding environment, potential exposure routes, cumulative effects and the extent of any potential risks. The PPC report states that the proposed ARL Precinct would have no level of potential adverse effects which would make the site unsuitable for a landfill development. Due to the sensitive receiving environment, the scale and significance of potential environmental effects anticipated, the conclusion should be based on a scientifically sound risk assessment.
- 7.3 The PPC request did not initially include a health risk or health impact assessment report. It appears from the Site Selection Report (Appendix D of the PPC report) that environmental effects from a future landfill at the subject location have been given a lower weight in the selection process and any potential health risks had not been directly discussed nor evaluated. Limited information provided for the site selection process renders the process non-transparent. Although it is understood that the disclosure of candidate site details is a sensitive issue, there are ways to deliver the information, while maintaining anonymity, to enable better understand how each of the site selection factors was assessed and scored and how the candidate sites were ranked for selection. It would be useful if the applicant was able to provide additional information on the site selection process in its evidence for the hearing.
- 7.4 The Site Selection Process report shows that the site selection criteria largely rely on the buffer distance of the proposed ARL Precinct to sensitive receptors (more than 1 km). However, the details and locations of the sensitive receptors have not been discussed further. It is unknown what sensitive receptors have been considered in the selection process. Therefore, it is uncertain to what extent the potential health risk has been taken into account in the site selection process.
- 7.5 *The Technical Guidelines for Disposal to Land (WasteMINZ. 2018)* contains criteria for landfill siting, which indicates that it is generally undesirable to site a landfill in areas that experience higher than average rainfall, flood plain or on land in a water supply catchment. The Hydrogeological Assessment (Technical Report E) shows that the proposed ARL Precinct has recorded some of the highest annual

rainfall in the region, 2000 mm/year as compared to 1,300 mm/year in the region. The Hydrogeological Assessment Addendum Report - Volume 1 (T+T, August 2020) shows that Valley 1 has a lower rainfall infiltration recharge (1% rainfall) as compared to that recorded for the wider region (2 to 4% of mean annual rainfall) due to hydraulic separation and underlying large zones of unfractured rock. This promotes a greater surface water runoff in the proposed ARL Precinct. The AEE lodged for the ARL land use consent states that the stormwater management system is designed with sufficient storage for up to a 100-year Average Recurrence Interval (ARI) storm event or 1% annual exceedance probability (AEP). Bureau of Meteorology of Australian Government website shows that the ARI is a term which is easily misunderstood. It states that a 100- year ARI does not mean that the event will only occur once every 100 years and in fact, every year, there is a 1% chance (a 1 in 100 chance) that the storm event will be equalled or exceeded.

(<http://www.bom.gov.au/water/designRainfalls/rainfallEvents/why100years.shtml>)

- 7.6 Flooding has the potential to wash contaminants from a landfill into the surrounding environment. Section 4.7 of the PPC report shows that Wayby Valley has approximately 430 ha flood plain, downstream of the proposed ARL Precinct and the margins of the main stream channels within the proposed precinct and an area to the east of state highway 1 in the Southern Block are identified by Auckland Council mapping as floodplains. The report shows that flooding causes restrict access to properties at times. Changes in impervious areas relating to the landfill development will also result in increased stormwater pear flows. Although the AEE for the ARL consent states that there will be a less than minor increase in flood plain of 1mm post-development of the ARL for a 100 year storm event (or 1% AEP), the extent of the storm events and associated adverse health effects have not been well discussed in both the AEE for the ARL consent and the PPC report.
- 7.7 The ARL Precinct is located in close proximity to streams and tributaries, which flow into the Hōteō River, the largest river in the Auckland region, by flow, catchment area and length (former ARC, 2010). The upstream Hōteō River is used as a source for community drinking water supply for Wellsford and the Regional Aquifer serves Warkworth's drinking water supply. It is understood that private bore water supplies are also present in the vicinity of the proposed ARL Precinct, but the depths of the bores are unknown. It is noted that additional drinking water sourced from the Regional Aquifer is required to supply Wellsford, and Watercare has raised a concern regarding the risk of impact of the proposed ARL on the Regional Aquifer through a submission on the PPC.
- 7.8 In addition, the Hōteō River has major cultural, spiritual and historic significance to local iwi and it is included in Auckland Council's routine water quality monitoring. The River is of significant recreational values for its whitebait fishery, possibly the only good whitebaiting spot in the Auckland region (Auckland Council, 2014). Surface water abstracted from the Hōteō River catchment is also used for agricultural purposes, in particular for irrigation (Auckland Council, 2014). Although public access to the river appears to be largely restricted due to privately owned land, a boat ramp is available near State Highway 16 for public access to the Kaipara Harbour and the Hōteō River for contact recreational activities such as swimming, waka, boating, fishing, mahinga kai, and water skiing, when people are physically in contact with water, involving a risk of involuntary ingestion or inhalation of water.
- 7.9 Auckland Council's monitoring data shows that the Hōteō River (Gubbs site) has a five years' median E. coli count of 116 E.coli/100ml over 2014 to 2018 monitoring period. This indicates very good microbiological water quality with a Suitability for Recreation Grade of 'A' in accordance with the MfE recreational guidelines MfE (2003) and an Attribute band of 'A' (Excellent) according to the NPS-FM 2020. The river water quality is in the top half of all monitored sites in the Auckland region. However, the water quality trends show that the quality is likely degrading for E.coli counts, dissolved reactive phosphorus and total phosphorus, and very likely degrading for ammoniacal nitrogen. In addition, the *State of the Environment Monitoring report (Buckthought, L. E. 2019)* shows that the Hōteō River is microbiologically unsafe for drinking in its current status, without treatment.

7.10 Freshwater resources in the Auckland region is scarce since it has the lowest length of rivers and shoreline of lakes for swimming (508km) as compared to other regions in New Zealand (maximum 9,125km in Canterbury) (Ministry for the Environment, 2017). The NPS-FM 2020 requires regional councils, in consultation with its community to take an integrated approach to managing land use, fresh water and coastal water and to safeguard the health of people who come into contact with the water.

7.11 Given the aforementioned information in paragraphs 7.5 to 7.9 of this memo, from an environmental standpoint, it appears that the WMNZ landholding in Wayby Valley has some factors that could make it less suitable for a landfill development. It is understood that securing a regional landfill facility is necessary for the rapid population growth of Auckland and the decision is a balanced consideration of environment, engineering and economy. However, the selection process should be more transparent with sufficient supportive evidence. This is to ensure that any significant risk to the environment including risk to people and communities will be avoided, and the quality of the highly valued surface and groundwater sources for drinking water supply, food and contact recreation is protected and maintained, and incur no future cost for remediation.

7.12 The assessment of environmental effects ('AEE') included in Section 4 of the PPC report is considered limited in both contents and supportive information. The AEE conclusions are largely made based on assumptions that any environmental effects can be addressed by resource consent processes. In particular, the AEE is lacking of a holistic approach on the assessment of potential cumulative effects of multiple sources of stressors (chemical, physical or biological) on the environment including people and the community. There are also no discussions on any uncertainties of the effects.

7.13 A Human Health Risk Assessment Report ('HHRA') has been provided as part of the resource consent application under Chapter E13 of the AUP OP for the proposed Auckland Regional Landfill ('ARL'). The landfilling activity is located within the proposed Sub-precinct A. It is noted that the proposed volume of the filling is similar between the PPC request (28.5Mm³) and the ARL resource consent (25Mm³). However, while the HHRA is only limited to the scale proposed for the ARL land use consent, it is considered that the investigation outcomes for the resource consent application should at least help understand the likely environment effects, including on human health. Therefore, I consider that the HHRA report is relevant to this PPC request and subsequently the report is discussed in this memo in sections 9, 10 and 11.

8. Issues raised from submissions under PPC request

8.1 I have reviewed submissions on PC42 identifying any concerns relevant to human health. In addition to Watercare's concern, the following themes around human health effects were raised in the submissions:

- concern regarding landfill situated in pristine natural environment not offering meaningful and long-term economic, social or cultural benefit to NZ;
- site considered unsuitable for a landfill due to effect on water supply, food sources, recreation due to close proximate to the freshwater waterways, Hōteu River and Kaipara Harbour;
- concern on impact on roof water supply, agricultural land;
- feel insufficient assurance of operational safety, impact on people and community;
- concern on unplanned natural or human error events, which can lead to catastrophe for community through contamination to the harbour;
- concern on risk to wellbeing and economies of Kaipara Harbour coastal community due to potential health risks which may require stopping water activities immediately;
- concern on degradation of natural state of land, and adverse effects on the morale, health and wellbeing of the local community and people,
- concern on high flood/rainfall area, potentially releasing leachate into the river and harbour with unacceptable risk;
- concern on extent of landfill precinct, and its operations encompassing entire WMNZ site; and
- doesn't align with RMA, AUP OP zoning for the area, unsuitable location leading to cost for clean up.

9. Summary of the Human Health Risk Assessment Report ('HHRA')

9.1 The HHRA report was based on the risk assessment framework described in the *Environmental Health Australia guidelines (2012)*. It adopted New Zealand-specific intake factors for the uptake of contaminants into home-grown produce recommended in the *Methodology for deriving standards for contaminants in soil to protect human health (Ministry for the Environment (MfE), 2011)* and data from the following reports submitted as part of the application:

- Engineering Report (Technical Report N)
- The Hydrogeological Assessment (Technical Report E)
- The Air Quality Assessment (Technical Report D)

Sources of contaminants (stressors)

9.2 The HHRA report summarised two previous HHRA reports for Hampton Downs and Redvale Landfill respectively. The risk assessment was noted only to be limited to exposure to contaminants in landfill gas. Both assessments concluded that the discharge of threshold compounds and non-threshold compounds did not pose an unacceptable risk to neighbouring residents.

9.3 Section 4 of the HHRA report discussed the issues associated with a landfill included leachate, landfill gas, surface water, dust and their receptor pathways. It concluded the key sources of contaminants were:

- leachate potentially seeping through a landfill lining system and the underlying soils into deeper regional groundwater, and/or into the site stormwater system through leachate breakout on a landfill face to surface water;
- landfill gas in the form of fugitive or partially combusted landfill gas.

9.4 The HHRA report stated that metals and volatile organic compounds (VOCs) including benzene and chlorinated solvents were the common contaminants in leachate, which would reach the greatest concentrations at full development of the landfill. The highest annual rate of potential leakage from the landfill was estimated to be approximately 3m³, equivalent to an average of 8.2L/day.

9.5 The HHRA report indicated that there was the potential for leachate breakout through lower permeability waste and/or in event of a long period of heavy rain. Based on the typical ammonia concentration within leachate, the permanent water volume in the wetland, and the rainfall and associated discharge volume. The maximum volume of leachate discharged from the site into surface water through breakout was calculated as 5 L/day as a worst-case scenario.

9.6 The HHRA and the Stormwater and Industrial and Trade Activity report ('SITAR') show that any surface water that drained onto the open working face and associated areas including the tipping pad will be treated as leachate. All surface water from other areas including workshop and gas plant will be collected and treated in stormwater ponds and a final engineered stormwater wetland prior to discharge into the receiving environment. Stormwater from the bin exchange area will be directed to raingardens prior to discharge into the receiving environment. The HHRA did not discuss the rationale for excluding stormwater/surface runoff from the key sources of contaminants, which were discussed in Section 4 of the report.

9.7 The HHRA report considered that dust emissions from placement of contaminated material at the working face would be negligible beyond the immediate working area by implementing well-established controls such as the application of water, rapid mixing and cover with other waste materials as well as pre-acceptance checks to avoid dusty waste. Deposition of contaminants from combusted landfill gas and fugitive landfill gas on roof water supply and soil was considered in the HHRA.

9.8 The HHRA report showed that the acceptance criteria for daily cover material (minimum 150 mm) for the landfill adopted NES soil standards for recreational land use and industrial/commercial land use in the *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites (MfE, 1999)*, or the *Australian National Environment Protection Council (NEPC) Health Investigation Levels for recreational land uses* if there is no relevant value in the NES soil. The HHRA considered these values were protective of the public using recreational areas or workers in case of exposure to petroleum hydrocarbons. The HHRA considered that exposure to contaminants in dust was not a relevant pathway since contaminants in soils used for cover material were very unlikely to cause off-site effects.

9.9 The HHRA report referred to the Risk Management Assessment (Technical Report S, Volume 2), which identified a number of scenarios that could give rise to unplanned discharge and the below events were assessed as having a 'moderate' residual risk when controls were implemented. It considered that the risk was tolerable.

- lining system failing due to differential settlement, earthquake or other mechanism
- discharge of contaminated stormwater if stormwater pipe or swales fail/block, up-catchment stormwater cannot discharge, and dammed water accumulates resulting in interaction with waste, creating leachate
- air emissions associated with sub-surface landfill fire
- waste acceptance criteria not met and hazardous waste received, resulting in higher levels of contaminants in leachate or discharges to air

The HHRA report stated that exposure to contaminants in the event of a significant unplanned release would be short term and can be mitigated by temporary measures such as evacuation, or restrictions on collecting food from surface water. Therefore, it was not considered necessary for further quantification of the effects on people's health.

Exposure assessment and receptors

9.10 The HHRA report referred to the groundwater risk assessment included in the Hydrogeological Assessment (Technical Report E), which used the Groundwater Services Inc. Risk-Based Corrective Action software package to predict leachate contaminants concentrations in groundwater, as well as groundwater as it entered surface water at potential points of exposure.

9.11 The Hydrogeological Assessment report identified 17 consented bores within 5km of the centre of Valley 1, which were indicated for domestic/municipal, stock and irrigation water supplies. This included one Watercare bore, which was confirmed as having been backfilled due to insufficient yield. The report also identified a couple of bores not listed in the Council records within the vicinity of the project area including an existing farm bore located at 1232A State Highway 1. The report considered that given the likelihood of low yielding aquifers, the probability of future groundwater takes in the vicinity of the site was low. It showed that the consented surface water takes in the surrounding area were largely from the Hōteō River, primarily for agricultural purposes, and in particular for irrigation.

9.12 The Hydrogeological Assessment report evaluated six potential points of exposure ('POE') (receptors) to contaminants in leachate:

- POE#1 (360m downstream from the landfill footprint) - freshwater ecology receptors at Valley 1 and 2 stream confluence, where groundwater could reach surface water in the vicinity of the stream confluence
- POE#2 and POE#3 (2,100m west) - freshwater ecology and recreational users at Hōteō River – regional groundwater flows to the west towards the Hōteō River
- POE#4 and POE#5 (1,900m) - stock watering/irrigation and potable water respectively in an existing farm bore at 1232A State Highway 1
- POE#6 (1,000m) – freshwater ecology at Waiteraire Stream

9.13 The Hydrogeological Assessment identified the potential for seepage of leachate to cause health effects from eating fish in the Kaipara Harbour as an issue required to be specifically addressed. It considered that POE#1 immediately downstream from the landfill footprint represented the worst-case scenario for receptors who collected food from the stream for human consumption. The assessment outcome from POE#1 could be inferred to the risk of consumption of food (fish or watercress where applicable) from further downstream and the Kaipara Harbour, where contaminant concentrations as a result of leachate seepage would be many orders of magnitude lower than in the stream confluence due to dilution.

9.14 The Hydrogeological Assessment report compared the predicted exposure concentrations from leachate with *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC 2000)* for ecological effects and contact recreation and drinking water guidelines. It predicted that contaminant concentrations at all potential points of exposure would not exceed the relevant guidelines. It therefore concluded that the potential seepage of leachate through the landfill lining system was highly unlikely to have any adverse effects on the Valley 1 and 2 stream confluence, the Hōteō River, the Waiteraire Stream or the groundwater users of the farm bore.

9.15 Based on the Hydrogeological Assessment report and the Air Quality Assessment report, the HHRA summarised the potential source pathway exposure in Table 4.2. The HHRA report evaluated the following three representative receptor types and associated exposure pathways. The potential for health effects from cumulative exposure to selected contaminants in leachate and landfill gas were considered for the first two receptors.

- Residential receptor (most sensitive residential receptor from dispersion modelling)
 - Inhalation of airborne contaminants;
 - Ingestion of drinking water supplied from roof collected water (deposition of airborne contaminants on roof from fugitive emissions or residual discharges from flares and generators) or the farm bore (POE#4) (whichever has more conservatively high intake values - drinking water from roof water was therefore chosen);
 - Direct ingestion of soil (pica)
 - Ingestion of home-grown produce from vegetable garden and eggs from chickens subject to aerial deposition of contaminants in soil and using farm bore (POE#4) for irrigation.
- Wild food collector (POE#1):
 - Harvesting of wild eels and watercress from the confluence of streams from Valley 1 and 2 (noting that in reality site management would discourage people from coming onto the landholdings in this manner); and
 - Incidental ingestion of a small quantity of surface water from the confluence of streams from Valley 1 and 2 during collection of eels or watercress.
- Public consumer eating beef or drinking cow's milk from a farm using either bore water (POE#4) within the WMNZ landholdings or from the confluence of streams from Valley 1 and 2 (POE#1) for stock watering.

9.16 The HHRA report believed that surface water takes from the Hōteō River were unlikely to be used for potable water. Therefore, it only considered recreational use of Hōteō River (POE#2) as assessed in the Hydrogeological Assessment for a direct exposure to contaminants in leachate. However, exposure via contact recreation was not additive to the cumulative risk assessment.

9.17 The HHRA did not consider the use of water from the Hōteō River for irrigation of crops or stock watering as it stated that the predicted concentration of contaminants in groundwater entering the river were lower than in the farm bore. The report therefore considered the assessment of use of farm bore water for stock irrigation was more conservative. It should be noted that only contaminants from leachate were assessed.

9.18 The HHRA report considered that the risk of leachate being discharged via surface water was low since procedures and systems were proposed to minimise, monitor and identify potential leachate breakouts, and the Landfill Management Plan and Emergency Management Plan included contingency procedures to cease discharge if a leachate breakout is identified. Nevertheless, the discharge of surface water containing low levels of leachate contamination (below trigger levels) was included within the receptor pathways (POE#1).

9.19 In addition to selected priority contaminants in leachate being assessed, per- and poly-fluoroalkyl substances ('PFAS'), as emerging contaminants of concern were assessed in consumption of eels, beef, and milk, chickens (drinking bore water) as well as incidental ingestion of surface water when fishing since the HHRA report considered these substances were the most sensitive contaminants in leachate given their mobility, environmental persistence,, and their known ability to bioaccumulate in animals. The HHRA stated that the substances were included because they were considered as emerging contaminants of concern due to their mobility and environmental persistence. Arsenic was assessed in water cress consumption due to its high bioaccumulation in freshwater vegetation.

9.20 The report considered that uptake of PFAS by eels at the stream confluence representing the worst-case exposure via freshwater fish or seafood due to PFAS in eels being significantly higher than other fish species. Therefore, the HHRA considered that if the calculated risk was acceptable, it would be concluded that exposure from other fish species in the Hōteō River and Kaipara Harbour would also be acceptable by a significantly greater margin.

9.21 A description of the estimated concentrations of contaminants in media (groundwater, surface water, air, soil (from deposition and irrigation) and roof drinking water), and exposure concentration were contained in Section 7 and Section 8 and Appendix F of the HHRA and the SITAR. It was noted:

- The HHRA estimated that it would take 6-20 years for any leachate to reach groundwater under the landfill and there would be a further delay in transportation of contaminants to farm bores and the stream confluence. Landfill gas generation rates would reach its highest when the landfill is full. The HHRA calculations conservatively assumed that these occur simultaneously.
- The potential exposure for leachate in groundwater and surface water was considered over the period of full development of the site. The potential leachate leakage to groundwater was modelled over a 50-year period to represent full development of the site;
- Source concentrations adopted the maximum value in leachate at Redvale Landfill assuming the concentrations being consistent over the period of exposure;
- The long-term average mass of stormwater discharge during rain events was used to estimate contaminant concentrations in stream confluence (POE#1) based on rainfall data over the period 2014-2018 considering 50% dilution factor;
- Dilution factor at the point of discharge into the groundwater was not taken into account;
- The annual aerial deposition rate of contaminants in soil was based on the maximum rate of emissions of combusted landfill gas and fugitive landfill gas and assuming the concentration was consistent over 30 years of residential exposure.

Risk characterisation

9.22 The HHRA showed that the risk was expressed in terms of the hazards based on the hazard Quotient (daily intake/ Tolerable Daily Intake) associated with exposure to 'threshold compounds', the incremental lifetime cancer risk associated with exposure to non-threshold compounds (carcinogenic substances), as well as Hazard Index (sum of hazard quotient). Cumulative hazard from exposure to multiple contaminants was assessed by summing all hazard Indices across all exposure pathways.

9.23 The HHRA adopted the generally agreed acceptable increase in risk in New Zealand of 1 in 100,000 (or 10 in a million) (MfE, 2011). The findings of the risk assessment are summarised as below:

- The cumulative lifetime incremental cancer risk of 0.23 in a million for the genotoxic carcinogens at a residential receptor was well below the acceptable risk level of 10 in a million. The cumulative hazard Index of 0.0143 was below the acceptable risk/hazard level of 1.0. It therefore concluded there would be no appreciable health risk posed to onsite (POE#4) and nearby residents. The HHRA stated that inclusion of substances evaluated at the Waste Acceptance Criteria limits would not alter the conclusion.
- The Hazard Index of 0.00219 for exposure to PFAS via ingestion of eels and incidental ingestion of surface water was well below 1.0. It therefore concluded that health effects were not likely to result from exposure by a person collecting and eating eels. Taking into account the significant dilution factor in Hōteu river and the Kaipara Harbour, the HHRA considered that exposure from other fish species in the river and the harbour would also be acceptable.
- The lifetime incremental cancer risk of 0.00227 in a million for exposure to arsenic via ingestion of watercress was well below the acceptable risk level of 10 in a million.
- PFAS in food (meat, milk and eggs) were well below the recommended trigger levels for further investigation in the Food Standards Australia New Zealand. Higher concentrations of PFAS were calculated in beef and dairy cattle being watered from the stream compared to the farm bore. The HHRA therefore considers that any health effects associated with eating these foods are not expected.

9.24 The HHRA therefore concluded that the cumulative hazard and risk estimates indicated that there would be no unacceptable hazards or risks for any of the contaminants or pathways considered for a representative residential receptor, exposure to other fish species and watercress further downstream or in the Kaipara Harbour or exposure to farm milk and animals. Overall, the report concluded there would be no unacceptable hazards or risks for any of the contaminants or pathways considered, both individually and cumulatively using a conservative screening approach.

10. Issues identified in the HHRA report

10.1 The HHRA report considers that the key sources of contaminants from the proposed landfill facility are leachate (seepage into groundwater and surface water – Valley 1 and Valley 2 stream confluence) and landfill gas. However, there is a lack of justification for why stormwater/surface water runoff from the project area is not considered as one of the key sources of contaminants. Stormwater is well recognised as a source of contaminants in an urban environment including industrial sites such as a waste disposal facility. A wider range of contaminant sources will be created as a result of the proposed landfill activity, including but not limited to:

- **Dust**
No dust emission modelling or existing monitoring data is provided to support the statement in Section 4.5.1 of the HHRA report that dust emissions from placement of waste will be negligible beyond the immediate working area.
- **Contaminants from daily cover**
The proposed acceptance criteria (recreational land use and industrial/commercial land use (petroleum hydrocarbon)) for daily cover material do not support the stated 'lightly contaminated soil' in the HHRA. In case of cyclone or heavy rainfall, there is the potential for contaminants in the daily cover to be blown or washed away from the tipping area into surface water in addition to the potential for leachate breakout.
- **Roadways and wheel wash water**
The wheel wash water contains contaminants carried on wheels. The SITAR shows excess water from wheel wash and runoff from roads will be discharged into stormwater ponds.
- **Contaminants from workshops and energy centre**
The proposed landfill facility will involve storage and/or use of extensive hazardous substances and wastes (Table 5.1 of the SITAR). These involve a 40,000L diesel tank, waste oil tanks, oil containers, dangerous goods store in workshop area; leachate collection tanks, a 30,000L oil tank and 6,000L waste oil tank for generator, transformers, a 2000L back-up diesel generator, and another dangerous goods store in the energy centre. Although there will be procedures to prevent and mitigate the effect of spills, contaminants discharging beyond these areas into stormwater/surface water cannot be discounted.

10.2 It is understood that the surface water runoff/stormwater discharge has been assessed by a specialist separately and the SITAR shows that the water will be treated to meet acceptable standards. It is noted from the s92 response letter (tranche 3) that the trigger levels for stormwater discharge have adopted the Default Guideline Values (DGV) in the ANZECC guidelines for the protection of 95% freshwater species except for arsenic, that a more stringent trigger level has been adopted to meet the Maximum Acceptable Value (MAV) in NZ drinking water standards. The s92 response letter (tranche 3) has also quoted the findings from a review of a long-term stormwater monitoring data, which shows that only copper concentrations elevated over the relevant ANZECC environmental guideline or trigger level for the protection of 95% freshwater species. The letter recognises that stormwater from the site is likely to contain typical urban stormwater contaminants, such as oils/greases and heavy metals like zinc and copper, mainly from the use of motor vehicles on site. It states that since the site stormwater will be treated through a best practice treatment system, it is unnecessary to evaluate the potential for health effects related to stormwater discharges.

10.3 However, the purpose of health risk assessment is to take a holistic approach to assess and quantify the combined risks to health from multiple sources. The traditional risk assessment approach by evaluating stressors individually, presented as if the others were not present, has been discouraged by international guidelines. Cumulative risk assessment means *an analysis, characterization, and possible quantification of the combined risks to health or the environment from multiple agents or stressors* (EPA, 2003). Stormwater is a well-known key source of contaminants in an urban environment and should not be discounted in the cumulative risk assessment process. By omitting this important source of contamination, the outcomes of the health risk assessment are likely to be underestimated.

10.4 The HHRA has only considered part of the contaminant sources (leachate and landfill gas) in the evaluation of the potential for health effects from cumulative exposure for residents and food collectors. Contaminants from other sources listed in point 9.1 have not been taken into account. This is reflected as below:

- Contaminant concentrations in surface water (POE#1, POE#2) have only calculated contaminant concentrations from leachate and assumed the surface water was free from other sources of contamination.
- As a result of the calculations, only bore water irrigation for vegetable garden and stock-watering has been considered in the evaluation of the health risk to residential receptors (POE#1) since higher contaminant concentrations have been found in leachate in groundwater than in surface water. It is uncertain whether this result would be different if it took into account contaminants from other sources. The surface water intake from the Hōteō River has been identified to be primarily used for agricultural purposes, in particular for irrigation. I therefore consider that the risk of irrigation from surface water or stock-watering has not been properly evaluated in the HHRA.
- Assessment of the risk of recreational use in the Hōteō River (POE#2) has only considered the impact from leachate migrated into the river. Other contaminant sources such as stormwater discharge/surface runoff, dust and airborne contaminants from flares and generators have been discounted. In addition, exposure via contact recreation in the river has been assessed individually and the risk has not been added into the cumulative assessment.
- Short-term effects from unplanned discharge have not been quantified. This may also relate to evaluations of the impact from acute toxic chemicals, non-chemical stressors, such as physical hazards, stress, microbiological stressors in the event of cyclone, flooding or fire.

10.5 The HHRA report shows that except for genotoxic carcinogenic compounds and PFAS, a screening assessment of priority threshold compounds in leachate and landfill gas has been undertaken based on source concentrations and relative screening toxicity values to determine the potential contaminant of concern. It is uncertain when taking into account contaminants from stormwater discharge and other sources, whether new potential contaminants of concern would emerge for further assessment.

10.6 An inconsistent approach to the risk assessment is noted. For example, the HHRA has considered airborne contaminants from flares and generators depositing onto a roof and soil as exposure pathways but discounted the deposition onto surface water.

10.7 Identifying the locations of the receptors is considered as an integrated part of a health risk assessment (Environmental Health Australia, 2012). The HHRA report has not fully evaluated the point of exposures in the surrounding environment, particularly, the extent, purpose and locations of surface water use. Exposure assessment should include some discussions of the size, nature, and types of human populations exposed to the agent, as well as discussion of the uncertainties in the above information (EPA, 2019). Understanding of the potential use of the surrounding environment is the first step to determine the sensitivity of the environment in terms of human health risk so that the extent of information required for assessment can be justified. Otherwise, it is likely either that an assessment has been undertaken unnecessarily leading to an overestimated risk or key concerns of exposure have not been sufficiently addressed.

10.8 Unplanned discharge has been assessed in the Risk Assessment Report as 'moderate' residual risk following implementation of control measures. Although the effects appear to be short-term in nature, further quantitative assessment is considered necessary in particular for acute toxicants. As a minimum, the assessment should include evaluation of the frequency of the likely events and the extent of populations who are likely to be affected based on available data.

10.9 Landfills are identified as possible sources of microbiological contamination (MoH 2017 pg 90). However, the HHRA has not undertaken an assessment of the impact of microbiological hazards presented in municipal wastes on the environment.

10.10 The HHRA has not included an assessment of microplastic impact on waterways nor implemented monitoring/control measures in the draft landfill management plan. Microplastic pollution including drinking water is a newly emerging issue around the world. The World Health Organization (WHO) stated in 2019 that '*based on the limited information we have, microplastics in drinking water don't appear to pose a health risk at current levels.*' However, uncertainties remain due to the potential cumulative effect from other sources such as food, air, and plastic toys (<https://www.who.int/news-room/detail/22-08-2019-who-calls-for-more-research-into-microplastics-and-a-crackdown-on-plastic-pollution>). The WHO has called for further assessment of microplastics in the environment and their potential health impact. Efforts are being made both nationally and internationally for the reduction of

plastic use. It is considered that the applicant should evaluate measures to further reduce the potential impact of plastics on the environment and human health and at least include microplastic in the monitoring programme for leachate and stormwater discharge.

10.11 In summary, the HHRA has assessed that the health risk levels to the receptors are low, with a wide margin of safety magnitude. It states the risk assessment results represent the worst-case scenarios based on the modelling results from the Hydrogeology Assessment and Air Quality Assessment. However, the HHRA has not fully evaluated the cumulative health effects of all sources of contaminants, which will be created from the proposed landfill facility. The key issue is the exclusion of surface water runoff/stormwater from the cumulative health risk assessment. The cumulative assessment has also not taken into account the risk from recreational use and the impact of airborne contaminants and dust on surface water. Omitting cumulative effects from sources other than leachate and landfill gas render the HHRA outcomes unconvincing and the assessed health risk is likely to be underestimated. In addition, there is lack of quantitative assessment of acute or short-term effects from unplanned release from the proposed ARL.

10.12 The application documents and the submissions for the resource consent indicate people use the environment for food sources, agriculture, drinking, irrigation, farm stock and recreation. However, the HHRA has not fully evaluated the extent and locations of the current human use nor the potential future use. Without fully understanding the human use of the environment, determining the actual health risk is difficult.

11. Summary of additional risk assessment information

11.1 Following further information request and meeting discussions in the resource consent process for the proposed ARL, an additional risk assessment was provided in the following documents with reference to *Hydrogeological Assessment- Addendum Report (Volume 1) (T+T, August 2020)*:

- *Further Sediment, Stormwater, Waste Acceptance Criteria and Health Risk Assessment Additional s92 Responses (T+T, 14 August 2020) (Further Response letter)*
- *Further Stormwater and Health Risk Assessment s92 Responses (T+T, 25 August 2020) (Second Further Response letter).*

The two response letters have addressed the following s92 matters for the proposed ARL:

- Re-assessment of cumulative risks to contact recreation, residential receptor, food collectors by considering additional contaminants sourced from surface water runoff/stormwater from the proposed ARL
- Suitability of surface water (stream) for irrigation of vegetable garden
- Evaluation of rainfall effect by using a higher rainfall (95% upper confidence level (UCL)) in modelling in addition to using annual average rainfall
- Discussion on approaches to unplanned events

Recreation and irrigation risk

11.2 The cumulative risk of using the Hōteō River (POE#2) for recreation has been assessed for modelled arsenic, chromium, lead, copper, and zinc concentrations, which were selected through a screening assessment, in consideration of the following additional contaminant contribution sources:

- ARL stormwater discharges – based on measured stormwater quality at Redvale Landfill and considering dilution factor
- background concentrations in the Hōteō River – based on Watercare data

The cumulative concentrations of metals in the Hōteō River were assessed as all below drinking water Maximum Acceptable Values (MAV) and ANZECC recreational guideline values (mg/L). The concentrations as a percentage of drinking water MAV (generally more stringent than recreational guideline values) are low in a range of 0.06% - 3.2%. Background concentrations of the metals in the Hōteō River account for more than 97% of the total metal concentrations in the River.

11.3 The cumulative concentrations for arsenic, chromium, lead, copper (dissolved) and zinc (dissolved) as well as mercury were modelled at Valley 1 and 2 stream confluence (POE#1) by adding the contribution from ARL stormwater discharge (data from Redvale Landfill with dilution factor considered). The re-modelled concentrations for arsenic and mercury at POE#1 were used for assessing the health risk of wild food collectors eating watercress and eels respectively. The cumulative concentrations of

metals in the stream confluence were assessed as all below drinking water MAV, ecological criteria and ANZECC recreational guideline values (mg/L). The concentrations as a percentage of drinking water MAV are in a range of 0.03% - 9%.

- 11.4 The second response letter has evaluated predicted concentrations in surface water with respect to the suitability of the water for irrigation. It found the modelled concentrations of PFAS are higher in the farm bore while metals are higher in surface water. The modelled cumulative concentrations for arsenic, chromium, lead, copper (dissolved) and zinc (dissolved) in the stream confluence and the Hōteio River are all less than 0.2% of the ANZECC & ARMCANZ (2000) short-term trigger values for agricultural irrigation (up to 20 years).
- 11.5 Since stormwater discharge has been taken into account in the cumulative effect assessment, the cumulative effect from dust depositing outside the landfill footprint on waterways is not considered a separate pathway since it is a potential contributor to contaminants in stormwater.

Residential receptor

- 11.6 The cumulative effect of the ARL to residential receptors was re-evaluated by using surface water from the stream confluence instead of groundwater for irrigation of the vegetable garden since metal concentrations in the stream are much higher than in bore water. The cumulative lifetime incremental cancer risk (genotoxic carcinogens) is 5.99E-07 (0.599 per million) for irrigation using stream water as compared to 2.34E-07 (0.234 per million) for irrigation using farm bore water in the HHRA report. Both figures are below the acceptable risk of 1.00E-05 (10 per million).
- 11.7 Residential PFAS exposure using bore water for potable supply and to irrigate the vegetable garden was re-evaluated by assuming an equivalent toxicity for additional PFAS compounds (PFNA and PFDA). Based on the updated data from *Hydrogeological Assessment - Addendum Report (Volume 1) (T+T, August 2020)*, the Hazard Index for contaminants of potential concern is 5.77E-05 as compared to 1.07E-05 in the HHRA report. Both figures are well below the Hazard threshold of 1.

Food collector and consumption

- 11.8 The re-modelled concentrations for arsenic and mercury at POE#1 were used for assessing the health risk of wild food collectors eating watercress and eels respectively.
- Arsenic - Cumulative incremental lifetime cancer risk for wild food collector eating watercress and indirect ingestion of surface water is re-calculated to be 1.28E-06 (1.28 per million), as compared to 2.27E-9 (0.0027 per million) estimated in the HHRA. However, the risk is still less than the acceptable risk level of 1.00E-05 (10 per million).
 - Mercury: The Hazard Index for wild food collector eating eels and incidental ingestion of surface water is 7.12E-03, which is below the Hazard threshold of 1.
 - PFAS compounds – Hazard Index for contaminants of potential concern for wild food collector eating eels and incidental ingestion of surface water is 4.93E-04 as compared to 1.07E-05 in the original HHRA, which however are all well below the Hazard threshold of 1.
 - Estimated concentrations of PFAS compounds in Finfish, Mammalian animal meat (beef), milk and poultry eggs are all below the calculated cumulative residential exposure trigger points with a significant margin (generally 5 orders of magnitude lower except for Finfish with 2 orders of magnitude lower).

Rainfall

- 11.9 The response letter demonstrates that during a higher rainfall event, such as a 95% percentile rainfall event, the contaminant concentrations are 16% of the concentrations at the stream confluence (POE#1) calculated using the annual average rainfall, reflecting additional dilution expected during a high rainfall event. It states that the results indicate that the contribution from the ARL stormwater discharges to concentrations in the Hōteio River would be lower during a peak rain event than based on the annual average of rainfall due to the expected significant further dilution to occur. The letter states that the worst case assumption would be that the mass flux of contaminants increase proportional to the rainfall so that the concentrations of contaminants in stormwater remain the same as the annual average regardless of the size of the rainfall event.

11.10 It is noted from the Hydrogeological Assessment Addendum Report that there is limited potential for contaminant transport to the regional groundwater since only a small fraction of the 1% of the rainfall recharge is predicted as travelling vertically from the shallow groundwater to the deeper Regional Aquifer.

Unplanned discharge

11.11 The response letters have not provided further information on the frequency nor extent of the potential unplanned discharges, which have been assessed as part of the Risk Management Assessment. The key components of the 'unplanned discharge' assessed in the Risk Management Assessment are included in point 8.9 of this memo and it includes potential lining system failing, discharge of contaminated stormwater, landfill fire and waste acceptance criteria not being met. The second response letter states that the 'moderate residual risk' unplanned events are low probability/high potential impact events, which are more appropriate to be addressed in the Risk Management Assessment report. It justifies that the potential leachate breakout (5 litres/day) has been considered in the HHRA. However, the leachate breakout appears to be irrelevant to the 'unplanned discharge' assessed in the Risk Management Assessment report.

11.12 Nevertheless, it is noted from the Hydrogeological Assessment Addendum Report that contaminant concentrations at the nearest Farm Bore (POE#4) are modelled at least three orders of magnitude below drinking water standards should leachate leakage occur through the liner at three orders of magnitude higher than the HELP model output rates. However, this does not address the wider effects from a potential lining system failure.

12. Specialist comments on further HHRA information

12.1 Modelling data from the aforementioned two s92 response letters for the ARL consent demonstrates that surface water runoff/stormwater discharge is the most significant contributor of metals and other genotoxic carcinogens contaminants from the proposed ARL to the receiving environment. Appendix B Table 2 of the second response letter indicates that ingestion of home-grown produce from vegetable garden subject to aerial deposition of contaminants and irrigation using surface water is the most sensitive exposure pathway as compare to inhalation of airborne contaminants, roof drinking water supply or direct ingestion of soil irrigated.

12.2 It is understood that mean concentrations of stormwater quality in Redvale landfill were used in the modelling. Since the maximum modelled concentrations for metals are less than 9% (arsenic) and 3.2% (chromium) of the drinking water standards in the stream confluence (POE#1) and the Hōteo River (POE#2) respectively, using more conservative concentrations such as the 95% UCL in the modelling will not change the health effect conclusion. However, it is noted that the outcome may differ for ecological effects since the modelled concentrations for zinc and copper are already close to the ecological default guideline values (DGV) for 95% species protection (70% and 88% respectively). Based on a meeting discussion with the consultants on behalf of WMNZ that the discharge criteria for stormwater are likely to be more stringent than those used in the modelling due to the very good baseline water quality in the receiving environment. In combination with the consideration that the contaminant concentrations are assumed to be present consistently over the landfill lifespan, I consider that the predicted long-term health risks are conservative.

12.3 Increased rainfall appears to result in a decrease in the modelled contaminant concentrations at the Point of Exposure (POE) evaluated in the HHRA due to an expected larger dilution factor. It is noted that an assumption is made that the mass flux of contaminant will not change during rainfall events. The response letter states that the absolute worst-case scenario is that the contaminant mass increases proportional to the rainfall, thus, the contaminant concentrations remain the same regardless of the size of the rainfall. Although I, in general, concur with the assessment, the potential impact of extreme weather conditions such as a storm with high wind and heavy rain on the landfill systems is still not well understood due to lack of supportive evidence from existing landfill data. It appears to be likely that a sudden large increase in stormwater runoff during a storm event could result in decreased retention times that leads to discharges without sufficient treatment expected by a normal operational stormwater treatment system. Uncertainties therefore remain in this regard and require further evaluation.

12.4 The predicted recharge rate from shallow groundwater to the deeper Regional Aquifer is low (1%). This in couple with the modelled low contaminant concentrations in groundwater when increasing leachate concentrations by three orders in modelling input, I tend to concur with the HHRA that the proposed ARL is unlikely to have a long-term adverse effect on the regional aquifer. However, it is noted from the review during the ARL resource consent process that the Council's Consultant

Hydrogeology Specialist, Mr Aslan Perwick, suggests that the groundwater travel times between the upper aquifer zone and the deeper regional aquifer zone may be significantly more rapid than accounted for. Mr Perwick also suggests that the flow direction in the regional aquifer from the area beneath the proposed landfill footprint is likely to be in a more south-westerly direction and towards the Waiteraire Stream. This raises some uncertainties on the modelling outcomes and whether the receptors assessed in the HHRA are representative. In addition, there is a lack of a full understanding of any short-term effects on the Regional Aquifer from unplanned releases as a result of stormwater system failure or lining system failure arising from differential settlement, earthquake, other mechanism or landfill fire. In consideration of the significant health risk arising from contamination of the regional aquifer, I share Watercare's concern with the potential risk of the proposed ARL on the Regional Aquifer.

12.5 The cumulative concentrations of metals in the Hōteu River were assessed as safe for irrigation of vegetable gardens. However, it should be noted that the current microbiological River water quality is unsafe for drinking without treatment and intermittently unsafe for recreation.

12.6 Based on the aforementioned assessment, the s92 response has largely addressed the issues raised with regard to cumulative long-term health effects of the proposed ARL on the receiving environment. The additional modelling data shows that stormwater discharge is the most significant source contribution for metals and other genotoxic carcinogens contaminants to the receiving environment as compared to other contaminant sources from the ARL. Although the final cumulative health and environmental risks to the receptors increase significantly as compared to those assessed in the initial HHRA, the risks are still within the acceptable risk levels and generally with a wide margin, thus does not alter the original HHRA conclusions. I in general concur with the HHRA conclusion that the long-term cumulative health risks of the proposed ARL on the residents, food collectors, and contact recreation are acceptable with a wider margin. However, I acknowledge the concerns raised by Mr Perwick and support his recommendation for further assessment to confirm the modelling assumptions and the appropriateness of the locations of the receptors selected for the HHRA.

12.7 I remain my concern on the 'moderate residual risk' 'unplanned discharges' arising from lining system failing, discharge of contaminated stormwater, landfill fire and/or waste acceptance criteria not met. These issues are also identified as the key concerns from the submissions. Human health risk assessment should not only address long-term health effects of a proposal but also short-term effects of the potential exposure to high contaminant concentrations such as during an unplanned discharge event. Although these events have a low probability of occurrence, the potential high health consequences should trigger the requirement for further evaluations based on information from existing landfill facilities or further monitoring data. The transparent assessment will ensure any decision is made based on sufficient evidence.

12.8 Landfills are identified as possible sources of microbiological contamination (MoH 2017 pg 90). The greatest contents of microorganisms include municipal wastes, and in particular – the wet fraction, i.e.: food scraps, remains from raw material for meals composition, empty packages after food products, used cleaning agents and personal hygiene materials, and faeces of domestic animals (Burkowska, A. et al, 2011 pg 72). Sensitive human use of both groundwater and surface water is present in the receiving environment but the HHRA has not addressed microbiological risk of the ARL on the environment. However, given the current freshwater microbiological water quality, the natural attenuation, and the expected large buffer to the receiving environment, I consider that the microbiological risk can be addressed outside the PPC process by a resource consent process.

12.9 Microplastics, plastic pieces less than 5 millimeters in size, are used in manufacturing, industry, and 3D printing and are in consumer products such as synthetic clothing fabric, toothpaste, and skincare products (<https://toxtown.nlm.nih.gov/sources-of-exposure/microplastics>). Due to the wide use of plastic, municipal landfills are expected to be a source of microplastic contamination. However, microplastic pollution including drinking water is a newly emerging issue around the world. The World Health Organization (WHO) has called for further assessment of microplastics in the environment and their potential health impact. Since the effect of microplastics in human health is not well understood, the assessment of the health effect of the proposed ARL land use or the ARL Precinct is difficult.

13. Inference of the HHRA to the PPC application and recommendations

13.1 The potential impact of the proposed ARL Precinct on the environment including human health has not been appropriately addressed in the private plan change evaluation report. Although extensive investigations have been undertaken within the proposed Auckland Regional Landfill Precinct, the information, including the human health risk assessment report is only limited to the scale of the

activities proposed for the ARL. The HHRA has largely addressed the long-term health risk of the proposed ARL to the receptors and assessed the health risks are low with a wide margin of safety magnitude. However, the report has not sufficiently addressed the potential short-term effects arising from extreme weather conditions or other unplanned discharges. Due to the significant values of the water resources to the iwi and the local community, it is considered that evaluation of these effects is important for the determination of the suitability of the site for a landfill development. In addition, the ARL Precinct involves a much large piece of land as compared to the ARL for consent. If the PPC is accepted by Auckland Council, a future landfill development at the proposed ARL Precinct, is likely much larger in scale than the current proposed ARL for consent, therefore, a greater health risk is expected due to additional contaminant sources participated from new activities. Based on the information presented above and in consideration of the uncertainties identified in this memo, I consider that the health effect resulting from the proposed Auckland Regional Landfill Precinct is currently unable to be determined.

13.2 The selected location at Wayby Valley is considered very sensitive in terms of human use of the regional aquifer, the Hōteu River, and the Kaipara Harbour for drinking water supply, irrigation, food collection and recreation, and is highly valued by people and the community. In consideration of the objectives of the NPS-FM 2020 for maintaining and improving freshwater quality in the region and in order to make any informed decisions, further health risk assessment is required to address the issues discussed in this memo.

13.3 Although there is a lack of sufficient evidence to demonstrate that the WMNZ landholding in Wayby Valley is an environmentally suitable location for a regional landfill facility, in principle I do not oppose the proposal to establish the ARL Precinct to enable the effective development and operation of a potential future landfill within the precinct. However, in my view there should be a robust and transparent process for the site selection, supported with sufficient evidence. I recommend that the PPC proposal is only approved subject to further health risk/impact assessment information to address the issues discussed in this memo. This could be provided by the applicant in its evidence for the hearing.

13.4 The ARL Precinct covers the entire WMNZ landholding in Wayby Valley and the effect assessment is largely based on a large buffer (more than 1km) to the surrounding sensitive land use. However, there are no proposed provisions within the Precinct to secure the buffer. I consider that WMNZ's '*proposed covenant on the title, and an easement relating to the generation of nuisance effects to protect their buffer from sensitive uses if any land within the precinct was to be sold*', is not an adequate measure as there is no guarantee that the land will be sold, or the buffer maintained. I therefore recommend that should the PPC be approved, a sufficient buffer (1km) should be secured by inserting the following wording into Table 1617.4.1 Activity Table so as to prohibit a new landfill being located within 1km proximity of the precinct boundary.

Activity		Activity status
New landfills		
...		
(Ax)	<u>New landfills within 1km of the boundary of the Auckland Regional Landfill Precinct</u>	PRO

13.5 In addition, to prevent sensitive activities from being easily established in the precinct, I recommend that the precinct provisions be amended by inserting the following wording into *Table 1617.4.1 Activity Table* to include Activities sensitive to air discharges, Activities sensitive to hazardous facilities and infrastructure, and Activities sensitive to noise as Non-complying activities with the precinct.

Activity		Activity status
General		
...		
(Ax)	<u>Activities sensitive to air discharges</u>	NC
(Ax)	<u>Activities sensitive to hazardous facilities and infrastructure</u>	NC
(Ax)	<u>Activities sensitive to noise</u>	NC

13.6 The proposed policies and provisions consider adverse effects on human health individually and do not address any potential cumulative effects from air, land, water contamination potentially arising from multiple activities occurring within the precinct. In addition, it is considered that the health effect from

any activities associated with a landfill facility or closed landfill at the Precinct must be avoided or minimised or mitigated to an acceptable level. Due to the nature of landfill activities and the potential creation of multiple sources of contaminants as discussed in this memo, a holistic risk assessment and management approach is needed to achieve the purpose of the RMA and to be in line with the NPS-FM 2020. I therefore recommend that should the PPC be approved, the precinct polities and provisions be amended by inserting the following wording into 1617.3 Policies (rp/dp) and 1617.6 Standards for both restricted discretionary and discretionary consents.

1617.3 Policies (rp/dp)	Recommended wording
3. Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise	Discharges of contaminants into water, land and air from the Auckland Regional Landfill's construction and operations shall avoid where practicable, and otherwise minimise, <u>and health effects are avoided, minimised or mitigated to an acceptable level:</u>
3. a...3.e.	
3. x.	the cumulative health effects from the air, land and water

1617.6 Standards	Recommended wording
1617.6 (1) Restricted Discretionary Standards	There shall be no unacceptable cumulative health effects at the Precinct boundary caused by the landfill operation or closed landfill
1617.6 (2) Discretionary Standards	There shall be no unacceptable cumulative health effects at the Precinct boundary caused by the landfill operation or closed landfill

Regards



Sharon Tang

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21 September 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Peter Kensington, Consultant Specialist – Landscape Architect

Subject: Private Plan Change 42 – Auckland Regional Landfill

Waste Management New Zealand (“**WMNZ**”) Limited

Landscape and visual effects

1.0 Introduction

1.1 I have undertaken a review of the proposed private plan change, on behalf of Auckland Council (“**the council**”), in relation to the specialist topic of landscape and visual effects.

1.2 I have worked as a landscape architect and a planner for twenty-three years. I am currently a director of KPLC Limited. As a consultant, through KPLC, I provide professional landscape architectural and planning services for applicants, regulatory authorities and submitters.

1.3 My relevant qualifications include a Bachelor of Landscape Architecture and a Bachelor of Regional Planning. I am a Registered member of the Tuia Pito Ora / New Zealand Institute of Landscape Architects and a Full member of the New Zealand Planning Institute. My landscape architectural work is focussed in the landscape planning speciality of landscape architecture, where an assessment of effects on natural character, landscape and/or visual amenity values is required, primarily in relation to applications for resource consent or plan changes.

1.4 In writing this memo, I have reviewed the following documents:

a. *‘Auckland Regional Landfill, Private Plan Change Request, Assessment of Effects and Section 32 Analysis’*, prepared by Tonkin & Taylor, dated February 2020 (“**Applicant Assessment / Analysis**”) with associated appendices, including proposed plan change wording at Appendix A and the following technical reports referenced at Appendix B:

i. Technical Report H – *‘Auckland Regional Landfill, Landscape and Visual Assessment’*, prepared by Boffa Miskell, dated 24 May 2019, Revision/Version 8 (“**Boffa Miskell Assessment**”); and

ii. Technical Report Q – *‘Auckland Regional Landfill, Landfill Management Plan – draft table of contents’*, no author acknowledged and undated [*I am aware of an updated version of this document, as part of the current application for resource consents, which includes an Ecological and Landscape Enhancement and Restoration Plan section*];

b. Letter from Tonkin & Taylor Limited (Simonne Eldridge) to Auckland Council (Peter Vari) dated 15 November 2019 *‘Clause 23 Response: Auckland Regional Landfill – Private Plan Change’*, with associated appendices A-C; and

c. Submissions (409) made in response to notification of the proposed plan change and as summarised in the *‘Auckland Unitary Plan, Operative In Part, Proposed Plan Change 42 (Private), Auckland Regional Landfill : Wayby Valley, Summary of Decisions Requested’*.

- 1.5 Following my initial review of the original request documents, I provided a preliminary review memo, dated 6 September 2019, to assist with the council's determination under schedule 1, clause 23, of the Resource Management Act 1991 (as to whether sufficient information had been provided to understand the proposed change and the actual or potential environmental effects from implementation of the proposed change). My preliminary advice confirmed that the lodged Boffa Miskell Assessment was comprehensive and contained an adequate amount of information to allow for an understanding of likely landscape and visual effects.
- 1.6 My preliminary advice, however, foreshadowed the following (mostly relating to the concurrent application for resource consent but also of relevance to the proposed private plan change):

“One important item of information which I was expecting to be included within the application material is in relation to the proposed Landscape Mitigation and Management Plan (LMMP). This will be a critical document that contains key information and direction over ongoing landscape management (implementation / maintenance / establishment), the mitigation of adverse landscape and visual effects and realising any positive landscape effects. The LMMP will work alongside a suite of other related management plans, including in relation to ecological management and compensation (off-set mitigation).

In this regard, I note that a draft table of contents for the wider Landfill Management Plan has been provided within Technical Report Q of the application AEE. In addition, the applicant's proposed conditions of consent, within Appendix G of the application AEE, also provide an indication of the suite of related management plans and their anticipated objectives.

From my experience with other applications that involve a reliance on management plans to assist with the mitigation of more than minor adverse effects, further detail is required on the content of these documents prior to consent being granted. I can appreciate that for this application, there are a number of unknowns in terms of design detail and construction, however I would have thought that at least a draft framework for each management plan could be prepared now.

Having said the above, I don't suggest that the lack of this detail on the LMMP should hold up notification of the application, but that the council should flag this issue with the applicant early, so that it can be addressed prior to the matter proceeding to a hearing.”

It is my understanding that WMNZ Limited is preparing further information (to be included in pre-circulated evidence) to support both the proposed private plan change and the concurrent application for resource consents; with this to include an updated draft Landfill Management Plan.

2.0 Key landscape and visual effects issues

- 2.1 In my opinion, the key issues which relate to an assessment of landscape and visual effects that arise through the proposed private plan change include:
- a. Ensuring the cultural landscape has been adequately understood, so that the proposed precinct provisions will enable the avoidance of adverse cultural landscape effects;
 - b. While the spatial area covered by the proposed precinct provisions contains areas identified as Outstanding Natural Landscape (“**ONL**”) under the current Auckland Unitary Plan (Operative in part) (“**AUP(OP)**”), the proposed precinct provisions have been drafted to ensure that adverse effects on these areas will be avoided – subject to my recommended amendment to the wording of the currently proposed standards under I617.6(2);

- c. The Boffa Miskell Assessment has comprehensively analysed the potential landscape and visual effects that might arise through the proposed construction and operation of a regional landfill facility within proposed Sub-Precinct A (“*the Project*”); including in relation to the following elements of that could give rise to adverse effects¹:
- i. The location, nature and extent of the proposed bin exchange area and access road in relation to the main viewing audiences and the way in which these elements would be seen within the local and wider landscape context;
 - ii. The location and nature of ancillary structures, including workshops, energy centre, signage and lighting;
 - iii. The location, nature and extent of the stockpile areas, landfill valley (Valley 1), and clay borrow pit, in addition to the staged timing of these and their degree of visibility;
 - iv. Physical changes to watercourses, wetlands and landform;
 - v. Whether the final landform that will be enabled, through filling of valley landform, will appropriately integrate with the landscape, both physically and visually; and
 - vi. The location and extent of existing vegetation (to be retained and removed) and proposed new vegetation.
- d. I concur with the findings of the Boffa Miskell Assessment that there will be a range of adverse landscape and visual effects that will result from the Project, including: localised moderate landscape effects during construction, operation and post-closure; and moderate-high visual effects on localised viewing audiences (which reduce through mitigation).
- e. However, there will also be positive landscape effects that will result from the Project, primarily as a result of the establishment of new areas of revegetated landscape; as well as the fact that the majority of the Project will not be readily visible beyond the boundaries of the proposed precinct spatial area (being an area within full ownership of WMNZ Limited).
- f. In order to ensure the ongoing avoidance, remediation and mitigation of actual and potential landscape and visual effects, in my opinion, the proposed precinct provisions could be strengthened to require (under clause 1617.9 ‘*Special information requirements*’) an application for resource consent(s) to provide copies of any proposed required amendments or updates to any currently consented / certified ‘*Ecological and Landscape Enhancement and Restoration Plan*’ that forms part of a wider ‘*Landfill Management Plan*’.

3.0 Applicant’s assessment

- 3.1 The Applicant Assessment / Analysis² has taken the findings of the Boffa Miskell Assessment into account when describing the existing landscape and natural character of the spatial area which is covered by the proposed precinct provisions (“*the precinct spatial area*”). I agree with this description, including that “... *the proposed precinct and surrounding area contains environments and habitats with varying levels of naturalness, including plantation forestry, indigenous forest, pasture, wetlands and waterways*”.
- 3.2 Importantly, this section of the Applicant Assessment / Analysis confirms that the proposed provisions do not enable any landfill related works or activities within those parts of the precinct spatial area which includes parts of ONL Area 32 (Dome Forest). The Applicant Assessment /

¹ Boffa Miskell Assessment, paragraph 2.32.

² Refer section 2.3.7.

Analysis has also identified that parts of the Hōteō River, to the south-west of and beyond the proposed precinct spatial area, are identified as an Outstanding Natural Feature (ID:49).

3.3 Taking into account the findings of the Boffa Miskell Assessment, in my opinion, the Applicant Assessment / Analysis has captured and outlined³ the key issues relevant to landscape and visual effects, in this instance. These issues and related assessment include:

- a. The ability to ensure that future landfill works / activity can avoid adverse effects on the identified areas of the precinct that have high landscape value and sensitivity;
- b. The size and extent of the proposed precinct spatial area (in WMNZ ownership), combined with existing topographical and other elements in the landscape (such as vegetation) will assist with the ability to effectively screen or obscure views of the majority of future landfill works / activity from viewpoints external to the area / property;
- c. The assessed '*low quality*' and '*low sensitivity*' of the existing landscape within the proposed precinct spatial area, other than for the area of ONL Area 32 (Dome Forest)⁴;
- d. For the small number of viewers (given the relatively remote location of the proposed precinct) that might be able to see aspects of future landfill works / activity (including within '*Sub-precinct A*' when landfill operations are at a high relative elevation) from external viewpoints; the combination of viewing distance (generally greater than 4.0km), transient viewing audiences (within vehicles travelling south on State Highway 1 and the future motorway – refer notice of requirement alignment) and context (being a working landscape that comprises farming and production forestry practices) will assist with integration; and
- e. The ability to further integrate any future landfill works / activity within the proposed precinct spatial area, through the design and location of operational elements and implementation, maintenance and management of new planting (as screening, for example) to further assist with the avoidance, remediation or mitigation of potential adverse visual effects.

3.4 It is my opinion that proposed precinct provisions, when considered alongside other relevant AUP(OP) provisions, will ensure that landscape and visual effects can be adequately assessed. Having said this, I recommend a new objective and policy be included to ensure that potential adverse landscape and visual effects from future buildings associated with landfill activity, can be avoided and mitigated. The requirement for any new landfill within the proposed precinct spatial area to follow an application for resource consent process, is particularly pertinent; with such an application to be assessed as either a discretionary or non-complying activity, providing for an assessment of landscape and visual effects to be included with the application.

3.5 Given the relatively remote location of the proposed precinct area and the low quality / sensitivity of the landscape, it is my opinion that this is an appropriate location for landfill activity where landscape and visual effects can be effectively avoided, remedied and mitigated (subject to design and assessment). Having said this, I am aware that the Boffa Miskell Assessment did not address cultural landscape effects; however, I understand that WMNZ has engaged with mana whenua to better understand the specific cultural landscape effects that have arisen. Until such detail is provided, I am unable to make an informed judgement on cultural landscape effects.

4.0 Submissions

4.1 I have reviewed all submissions made on the proposed private plan change, concentrating on those that raise landscape and visual effects matters. I have grouped my assessment of the

³ Refer section 4.10.

⁴ Boffa Miskell Assessment, paragraphs 2.5-2.12 and sections 3.0-4.0.

relevant issues raised into sub-topics, as set out below, with all relevant submissions referenced being in opposition to the proposed private plan change and all submissions seeking that the council makes the decision to decline the plan modification.

TOPIC 1 – Landscape, natural character and visual effects (general)

Submission 7 – Mary-Jane and John Appleby

We do not believe the area/site proposed is an appropriate or suitable location for a landfill to be constructed, given its close proximity to local community and enjoyed public spaces, potential impact on the [pristine] natural environment . . .

Submission 8 – No Mega Landfill In Dome Valley facebook page c/- Alton Crisp

Allowing this landfill to proceed would be a gross failing of your duty as Mayor to protect scenic areas of high natural values performing important tasks such as habitat for native species, both flora and fauna, a lot of which is currently critically endangered . . .

- *The dome valley whether farmland or the forest is a beautiful piece of nature (Katrina Dyer)*
- *Special valley – the beauty of the place (Joan Brown)*
- *This is a beautiful area and doesn't need to be destroyed by a landfill (Sharon McMurray)*
- *A landfill in the Dome Valley would ruin a beautiful piece of the country (Jackie Tameris)*
- *In beautiful scenery (Rebecca Temperley)*
- *Gorgeous valley (June Spragg)*
- *Dome Valley is a pristine natural wonderland (Kel Boocleigh)*
- *Keep our beautiful land natural (Diana Manning)*
- *It is a beautiful area (Andrea Gough)*
- *The site is a beauty spot (Graham Cutts)*
- *The dome is a beautiful place (Jakob Taylor)*
- *Leave one of the most beautiful landscapes in the world alone (Liam Hunt)*
- *We need to protect our native landscape (Charlotte Owens-Pring)*
- *The dome is a beautiful natural place that shouldn't be ruined (Donna Ellis)*
- *The site is a well-used scenic tourist route (Simone Graham)*
- *Why spoil a beautiful spot with trash (Steve Williams)*
- *Too beautiful a place for a rubbish dump (Karen Christiansen)*
- *Why cover something beautiful into a dump (Steve Williams)*
- *The Dome valley is a beautiful recreational environment (Janette Ravens)*
- *How dare you even try to fill this beautiful place up with Trash (Linda Hammon)*
- *Just moved to Kaipara such a beautiful spot don't want it ruined (Nigel Clapp)*
- *The nature here is beautiful, let's leave it beautiful (Annemarie Hoste)*

- *Why put a landfill in such a beautiful area (Vivien Jones)*
- *I drive through that valley every so often, and it is one of the especially beautiful sections along HWY 1. Whose idea was it to foul the place with a tip? (Joshua Salter)*
- *Why would you want to do this in such beautiful landscapes? (Tarina Paparoa)*
- *Beautiful area (Jan Ahrens)*
- *Such a beautiful drive thru the dome (Tom Conway)*
- *This part of the world is so beautiful – please don't destroy it with landfills (Eileen Auckram)*
- *We've just driven through The Dome and it's glorious. Why would you want to make it into a landfill?? (Jessica O'Halloran)*
- *New Zealand is known for its beauty, why destroy it. There's no feasible reason for it (Trudy Foster)*

Submission 9 – Daniel Mohr

It [the proposed landfill] will have significant adverse effects on the natural character of the area.

Submission 35 – Environs Holding Limited (environmental subsidy of Te Uri o Hau Settlement Trust) Fiona Kemp

Adverse landscape and natural character effects.

Submission 45 – Ngati Whatua Orakei c/- Renata Blair and c/- Andrew Brown

Adverse landscape and natural character effects.

Submission 74 – Results Plus Limited c/- Peter Foster

It [the Dome Valley] is a beautiful natural area . . .

Submission 90 – Thomas Gregory Parsons

The proposed "landfill" will severely damage the quiet and beautiful way of life freely chosen by residents for many kilometres around it (as a moral issue).

Submission 107 – Mikaera Miru, Kaitiaki - Waiāotea Marae, Te Uri o Hau / Ngati Whatua

The proposal results in more than minor effects and include significant, actual and potential adverse effects to the environment as follows:

- *Landscape and natural character . . .*

Submission 110 – Dedrie Trnjanin

Ensure that this natural, beautiful part of New Zealand remains unaffected by waste.

Submission 119 – Julie Pescud

This area is far too beautiful to ruin with a landfill. The residents have purposely moved here to live in a beautiful pristine and natural environment . . .

Submission 132 – Te Rūnanga o Ngāti Whātua, Dame R. Naida Glavish (Chair) / Alan Riwaka (Chief Executive) c/- Rob Enright(counsel)

The proposal results in more than minor, and significant and actual and potential adverse effects on the environment. These include:

- *Intrinsic values, amenity, and quality of environment*
- *Landscape and natural character . . .*

PC42 should be declined under the 1st Schedule of the RMA. If it is not declined, then substantial amendments to PC42 are required, as set out above (132.1). For clarity, this includes avoiding adverse effects on [amongst others]:

- *natural character and landscape.*

Submission 146 – Leihia Wilson

The proposal results in more than minor, including significant, actual and potential adverse effects to the environment. These include:

- *Intrinsic values, amenity, and quality of environment*
- *Landscape and natural character . .*

Submission 149 – Ngā Māunga Whakahii o Kaipara Development Trust c/- Jane Sherard

The PPC42 request implications are more than minor, including significant, actual, and potential adverse effects to the environment. These include:

- *Landscape and natural character impacting on intrinsic values, amenity, and quality of environmental . . .*

Submission 398 – Maria Louise Henare, aka Mina Henare-Toka, Kaitiaki, Tinopai Resource Management Unit

The proposal results in more than minor, including significant, actual and potential adverse effects to the environment. These include:

- *Intrinsic values, amenity, and quality of environment*
- *Landscape and natural character . .*

Submission 408 – Yvonne Reid

Deny this landfill . . . to protect . . . the natural beauty of the environment.

My response to the above submissions made under Topic 1

4.2 I acknowledge that people will have an awareness of the landfill activity within the localised landscape, for example people viewing from the state highway within vehicles passing by the facility entrance and also viewing activity associated with progressive construction of stockpile areas; however, it is my opinion that the majority of the site is remote and will not readily be visible beyond the boundaries of the precinct. This includes the 'Sub-precinct A' area which is located in a visually discrete part of the precinct, with landform and existing vegetation being mitigating factors to ensure that landfill activity will not be visible from public viewpoints. The provisions require the avoidance of any activity within the identified ONL and there are opportunities for landscape enhancement, through mitigation and remediation planting within the precinct.

4.3 As such, while there may be some localised adverse effects on landscape character and quality that will arise in areas internal to the precinct, primarily as a result of site establishment and initial construction works and from the landfill itself; it is my opinion that people experiencing the precinct area from external viewpoints, as a result of landfill activities, will be adversely affected

to a low degree. The site is located within the context of an existing landscape of extensive areas of production forestry, with the management of this resource resulting in similar landscape and visual effects. The requirement for the preparation, implementation and ongoing maintenance of remediation and mitigation measures to improve landscape and visual amenity values, through a Landfill Management Plan, will assist in achieving this appropriate outcome, in my opinion.

- 4.4 Given the low assessed sensitivity and quality of this landscape (as confirmed in the Boffa Miskell Assessment), it is my opinion that adverse landscape, natural character and visual amenity effects can be appropriately avoided, remedied and mitigated through the consenting process.

TOPIC 2 – Cultural landscape effects

Submission 35 – Environs Holding Limited (environmental subsidy of Te Uri o Hau Settlement Trust) Fiona Kemp

Adverse cultural effects to mana whenua and the related cultural landscape where the proposal is located.

Submission 45 – Ngati Whatua Orakei c/- Renata Blair and c/- Andrew Brown

Adverse cultural effects to mana whenua and the related cultural landscape where the proposal is located.

Submission 107 – Mikaera Miru, Kaitiaki - Waiatea Marae, Te Uri o Hau / Ngati Whatua

The proposal results in more than minor effects and include significant, actual and potential adverse effects to the environment as follows:

- *Adverse cultural effects to mana whenua and the related cultural landscape where the proposal is located . . .*

Submission 132 – Te Rūnanga o Ngāti Whātua, Dame R. Naida Glavish (Chair) / Alan Riwaka (Chief Executive) c/- Rob Enright(counsel)

The proposal results in more than minor, and significant and actual and potential adverse effects on the environment. These include:

- *Adverse cultural effects to Te Rūnanga o Ngāti Whātua and the related cultural landscape where the proposal is located . . .*

Submission 146 – Leihia Wilson

The proposal results in more than minor, including significant, actual and potential adverse effects to the environment. These include:

- *Adverse cultural effects to Te Rūnanga o Ngāti Whātua and the related cultural landscape where the proposal is located . . .*

Submission 149 – Ngā Māunga Whakahii o Kaipara Development Trust c/- Jane Sherard

The PPC42 request implications are more than minor, including significant, actual, and potential adverse effects to the environment. These include:

- *Adverse cultural effects to Ngāti Whātua o Kaipara and the related cultural landscape involved.*

Submission 398 – Maria Louise Henare, aka Mina Henare-Toka, Kaitiaki, Tinopai Resource Management Unit

The proposal results in more than minor, including significant, actual and potential adverse effects to the environment. These include:

- *Adverse cultural effects to mana whenua and the related cultural landscape where the proposal is located . . .*

My response to the above submissions made under Topic 2

- 4.5 The submissions from mana whenua above have raised an important issue that requires consideration when determining landscape effects. As I stated at paragraph 2.5 above, while the Boffa Miskell Assessment does not address cultural landscape effects; I understand that WMNZ has engaged with mana whenua submitters to better understand the specific cultural landscape effects that have arisen. I also understand that, through the associated application for resource consent process, potentially opportunities may arise to realise appropriate mitigation measures (in the form of acknowledgement, interpretation, access and plant selection). While it is therefore difficult for me to make an informed assessment of the proposal's cultural landscape effects at present because I have not been involved with any relevant engagement and, I understand that WMNZ will be responding to this issue through submissions and evidence.

TOPIC 3 – Visual pollution (from rubbish and trucks) as part of nuisance issue

Submission 76 – Tracy Isobel New c/- George New

Rubbish distribution is likely throughout the surrounding environment by wind and rainfall with adverse effects on biodiversity. This will cause: . . . distasteful views for the community when seen . . . Visual nuisance (on people and animals) . . . distasteful views of multiple rubbish trucks (300-500 a day) travelling on our small country roads.

Submission 108 – Paul Surman

Rubbish distribution is likely throughout the surrounding environment by wind and rainfall with adverse effects on biodiversity. This will cause: . . . distasteful views for the community when seen . . . Visual nuisance (on people and animals) . . . distasteful views of multiple rubbish trucks (300-500 a day) travelling on our small country roads.

Submission 144 – Riley Hathaway

Visual nuisance (on people and animals) caused by the development and operation of the landfill.

Submission 157 – Nicola Kaye Morrison AND Submission 395 - Breda Matthews

Rubbish distribution is likely throughout the surrounding environment by wind and rainfall with adverse effects on biodiversity. This will cause: . . . distasteful views for the community when seen . . . Visual nuisance (on people and animals) . . . distasteful views of multiple rubbish trucks (300-500 a day) travelling on our small country roads.

Submission 401 – Sandra Mather

The beauty of the Dome Valley area ruined by hundreds of trucks per day . . .

My response to the above submissions made under Topic 3

- 4.6 I acknowledge that the precinct would provide for the introduction of an activity into this landscape that may be perceived by people as being out of character with the existing environment and that there is the potential for adverse visual effects to arise through rubbish distribution through the wider landscape (wind-blown from trucks, for example). In my opinion however, consistent with

the Boffa Miskell Assessment findings, given the remote nature of the precinct, with landfill activity within 'Sub-precinct A' located in a visually discrete part of the precinct, the likelihood of external adverse visual effects from landfill activity within the WMNZ landholdings will be very limited.

- 4.7 Following my visit to the Redvale Landfill operations as part of understanding this application, I noted that WMNZ has a good track record in managing that property, so that rubbish is well contained within the site. I note the use of mechanisms such as a Landfill Management Plan, in combination with other enforceable consent conditions, will assist with setting requirements to ensure the management of issues that arise in relation to the issue of visual nuisance that might occur from rubbish inadvertently being strewn throughout the local landscape. For example, conditions of consent could require the regular collection and disposal of rubbish that might accumulate within the vicinity of the site entrance in the state highway corridor. In addition, the establishment and ongoing involvement of a Community Liaison Group and management of complaints, can be an appropriate avenue for these types of issues to be raised and addressed.

TOPIC 4 – General landscape effects

Submission 121 – Nicholas Dunning

Conflicts with existing resource management regarding green belts around greater Auckland.

My response to the above submission made under Topic 4

- 4.8 As far as I am aware, the concept of 'green belts' is not an outcome which is explicitly sought through the AUP(OP), other than by default through the rural zoning provisions. It is also my observation that landfill activities can successfully integrate into rural landscapes (e.g. Redvale).

TOPIC 5 – Tree removal details

Submission 111 – Alistair de Joux

Unable to find detail over number and size of individual significant native trees for removal.

My response to the above submission made under Topic 5

- 4.9 It is my understanding that detail around the proposed removal of individual trees of significance is a matter that is more appropriately addressed through the application for resource consent process, rather than the proposed private plan change process. I am aware that some trees of collective landscape and ecological value are proposed for removal through that process; with off-set compensation being required in order to mitigate proposed unavoidable adverse effects.

TOPIC 6 – General visual effects

Submission 95 – Alexander Robert Doig Woodward

The dump, even in the unlikely event that it never leaks, would remain a permanent toxic blight on the landscape . . .

My response to the above submission made under Topic 6

- 4.10 In my opinion, given that the majority of the site is remote and will not be readily visible beyond the boundaries of the precinct (including the 'Sub-precinct A' area, which is located in a visually discrete part of the precinct), future landfill activity will not visually blight the landscape. Mitigating factors such as landform and existing vegetation, alongside the opportunity for additional planting (native and exotic species) to be undertaken, are mitigating factors that will further ensure the landfill activity successfully integrates within the landscape – acknowledging that a new elevated

landform will be created to replace existing valley forms. Once complete, as part of ongoing aftercare responsibilities (as required under Landfill Management Plan provisions), planting can be established over the finished cap of the landfill to further assist with this integration. For those people that have the ability to view the finished landform from external viewpoints, given the viewing distance (over 4.0km) and context (production forestry and pasture), it will be very difficult to discern a noticeable change in landscape character or value post-closure of the landfill.

TOPIC 7 – Visual effects for close neighbours

- 4.11 I had anticipated that some submitters within private properties would raise adverse visual effects issues. For example: ‘. . .the view from our house will be changed by proposed landfill activity, so that our outlook is compromised . . .’. However, I have not viewed any submissions raising this issue. The following submitters are however located in close proximity to the site:

Submissions 82 and 128 – Ian and Deborah Sarney, at 72 Spindler Road;

Submission 96 – Bridgit Bretherton-Jones, at Waiwhiu Road; and

Submission 154 – Waterfall farm (Waiwhiu) Limited, at 149 Waiwhiu Conical Peak Road.

My response to the above submissions made under Topic 7

- 4.12 I have undertaken a recent site visit (11 September 2019) with WMNZ’s landscape architect to check the location of the above submitters. As a result, it is my preliminary opinion that landfill operations within ‘Sub-precinct A’ area will not be visible from these submitter properties.
- 4.13 To confirm matters and to further assist with an assessment of this potential issue, I understand that WMNZ will be including, as part of their expert evidence, refined Zone of Theoretical Visibility (ZTV) mapping which will clearly identify the location of existing dwellings within the wider landscape, including highlighting the location of the above and other relevant submitters.

5.0 Assessment of landscape and visual effects

- 5.1 Subject to confirmation that cultural landscape effects can be addressed, it is my opinion that the Boffa Miskell Assessment has comprehensively analysed the relevant landscape and visual effects that may arise from the construction and operation of a regional landfill facility within the area of WMNZ Limited landholdings subject to the proposed private plan change provisions.

- 5.2 I agree with pertinent aspects of the Boffa Miskell Assessment⁵, namely:

- a. The proposed precinct spatial area is predominantly located in a working landscape that accommodates farming and forestry practices; providing an ever-changing context within which future developing landfill activities will be seen within and against. It is this context of a working rural landscape (with ongoing forestry clearance, for example) with very few sensitive receivers (people living within dwellings on rural-lifestyle properties, for example) that will help to ensure the overall integration of landfill activity within the precinct;
- b. Future developing landfill activities will be able to avoid locating within those areas of the proposed precinct spatial area that have a high landscape quality and/or sensitive to change; and additional plant establishment and revegetation of these natural landscape elements is possible, representing appropriate remediation and mitigation measures;

⁵ Summarised in Section 10.0.

- c. The greatest potential adverse visual effects will likely be on people viewing from within residential dwellings on three properties located adjacent to Springhill Farm⁶. I understand that WMNZ will be including, as part of their evidence, refined ZTV mapping which will clearly identify the location of these existing dwellings. While the adverse effects on these viewing audiences was originally assessed as being moderate-high (more than minor), as a result of further assessment during my recent site visit with WMNZ's landscape architect, it is my opinion that adverse visual effects on these viewing audiences will be successfully mitigated;
 - d. For many viewing audiences in the Wellsford township and environs, future developing landfill activities will not be visible. For those people viewing from the west that might be able to see the activity (the upper parts of the main access road and formation of Stockpile 1), given the viewing distance and context, these adverse visual effects will, at most, be moderate-low (minor) during site establishment, reducing to low (less than minor) over time. Having said this, the Boffa Miskell Assessment acknowledges that moderate (more than minor) adverse effects might be experienced by a limited number of viewing audiences around Davies Road because the landfill activity may be visible directly in front of the Dome Summit (again, the updated / refined ZTV mapping to be provided in evidence by WMNZ, will assist in an understanding of the location of these viewing audiences); however, the effects may only peak during limited periods of time when uncapped fill is observable;
 - e. Viewers travelling along State Highway 1 and the future motorway will be transient and experience only fleeting views of stockpile activity (which will be similar in appearance to rural earthworks activity) and of the site entrance (with the bin exchange activity to be located well within the site and screened by existing and proposed planting);
 - f. Visual effects throughout the life of future developing landfill activities, on localised viewing audiences, can be mitigated through design measures; including, for example, through the establishment of screen planting, revegetation and hydroseeding. Progressive capping of the landfill and vegetation establishment will contribute to integration post closure; and
 - g. The outlook for the majority of viewing audiences will be characterised by the production forestry cycles occurring within a wider outlook; with these continuing changes to land-use within the landscape assisting with the integration of future developing landfill activities.
- 5.3 It is also my opinion that the final elevation of capped landfill within 'Sub-precinct A' will reach a level that is appropriate within the context of the wider landscape. My understanding is that the maximum elevation of the completed landfill landform (without planting) will be RL200m, which will remain lower than the main defining 'Wilson Road Ridge' to the east and the 'Jackson Road Ridge' to the south. I understand that WMNZ will be providing further mapping which explains and illustrates this outcome, as part of their expert evidence.
- 5.4 Within my area of specialist expertise, it is my opinion that the proposed precinct provisions will be consistent with and work alongside the direction and framework of the AUP(OP), including in terms of giving effect to the Regional Policy Statement; for example, in relation to:
- a. Encouraging innovative design to address environmental effects (RPS objective B2.3.1(2));
 - b. Protecting the quality of the natural environment (RPS objective B3.2.1(2)(e));
 - c. Enabling infrastructure while managing adverse effects on the quality of the environment and amenity values (RPS objective B3.2.1(3)(a)-(b));

⁶ Being 1232, 1232a and 1282 SH1 – refer Boffa Miskell Assessment, paragraph 9.91 (page 44) and at Plate 5 (page 45).

- d. Providing for infrastructure, recognising a functional/operational need to locate in areas that have natural and physical resources, while ensuring that adverse effects are avoided, remedied or mitigated (RPS objective B3.2.1(8) and policies B3.2.2(3), B3.2.2(6) and B3.2.2(8));
 - e. Ensuring an appropriate assessment of adverse effects on Mana Whenua values (RPS policy B6.3.2(3));
 - f. Enabling a diverse range of activities while avoiding significant adverse effects on rural areas and avoiding, remedying or mitigating other adverse effects on rural character, amenity, landscape and biodiversity values (RPS policy B9.2.2(1));
 - g. Cleanfills, managed fills and landfills are sited, designed and operated so that adverse effects on the environment are avoided, remedied or mitigated (RP objective E13.2(1) and policy E13.3(4));
 - h. Enabling and providing for outdoor activities with appropriate levels of artificial lighting and control the intensity, location and direction to avoid significant glare and light spill in order to limit adverse effects, including the loss of night sky viewing (DP objectives E24.2(1)-(2) and policies E24.3(1)-(2));
 - i. Enabling infrastructure, including electricity generation and avoiding, remedying or mitigating adverse effects, including nuisance from light spill and on the amenity values of adjoining properties (RP/DP objective E26.2.1(8)-(9)) and policy E26.2.2(4));
 - j. Maintaining or enhancing the character, amenity values and biodiversity values of rural areas, while accommodating the localised character of these areas and the dynamic nature of rural production activities (DP objective H19.2.3(1) and H19.2.5(3));
 - k. Managing the effects of rural activities to achieve a character, scale, intensity and location that is in keeping with rural character, amenity and biodiversity values, including characteristics of: a predominantly rural environment; fewer buildings of an urban scale, nature and design; and a general absence of infrastructure which is of an urban type and scale (DP policy H19.2.4(1)); and
 - l. Enabling use and development that maintains or enhances the values or appreciation of an outstanding natural landscape or outstanding natural feature (DP policy D10.3(5)).
- 5.5 Subject to the recommended changes that I have set out below, including in relation to my suggestion for an additional objective and policy to ensure successful integration of proposed buildings and structures within the landscape; I therefore agree with the Applicant Assessment / Analysis that the proposed precinct provisions, when considered within the context of and alongside other existing provisions of the AUP(OP), will be appropriate and provide a framework within which actual and potential landscape and visual effects can be assessed in order to ensure adverse effects are avoided, remedied or mitigated.

6.0 Conclusions and recommendations

- 6.1 Subject to further understanding of cultural landscape effects, which will allow for an informed assessment, in my opinion WMNZ has adequately assessed the effects on the environment from the proposed private plan change in relation to landscape and visual effects. Within my area of specialist expertise, it is my opinion that: the proposed precinct provisions will be consistent with and work alongside the direction and framework of the AUP(OP); there are no National Policy

Statement provisions of relevance to landscape and visual effects; and, to the best of my understanding, there are no other relevant non-statutory strategies or plans.

- 6.2 Following my review of the proposed private plan change, in order to strengthen the intent to avoid adverse effects from future developing landfill activity on areas of identified outstanding natural landscape within the proposed precinct spatial area and for consistency, I recommend the following amendments to the currently proposed precinct provisions⁷:

Recommended change 1

I617.2 Objectives [rp/dp]

...

7. Landscape and rural character is maintained and enhanced through the appropriate location and design of activities and structures and the avoidance of inappropriate activities in any Outstanding Natural Landscape overlay area.

...

I617.3 Policies [rp/dp]

...

7. Manage adverse effects of buildings and structures by:

(a) requiring buildings, structures and earthworks associated with access and building platforms, to be of a design, form, scale, density and location to ensure sensitive integration within the landscape and the retention of rural character and amenity values; and

(b) avoiding buildings and structures on ridgelines and ensure their profile does not visually protrude above the natural line of the ridge.

Reason: In my opinion, the underlying zone objectives and policies do not contain enough directives to require an assessment of future proposed buildings and structures within the precinct area, in order to ensure the successful integration of these elements into the landscape.

Recommended change 2

I617.6 Standards

I617.6(2) Discretionary Standards

4. No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, **or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (except Sub-precinct B).**

Reason: the additional text outlined above appears to be an omission and reinstatement of this text would make the I617.6(2) provisions consistent with the I617.6(1) provisions, which state:

I617.6 Standards

I617.6(1) Restricted Discretionary Standards

⁷ Suggested deletions shown as ~~strike through italic~~ / suggested additions shown as **bold underlined** text.

5. *No works, other than ecological restoration or enhancement works, shall occur within any Wetland Management Area overlay, or within any Significant Ecological Area overlay, or within any Outstanding Natural Landscape overlay, or in any Natural Stream Management Area overlay (except Sub-precinct B).*

Recommended change 3

1617.9. Special information requirements

~~*There are no special information requirements in this precinct.*~~

Any application for a new landfill under rules 1617.4.1(A1)-(A5) must be accompanied by a Landfill Management Plan which applies to the full extent of the precinct.

Reason: In order to ensure the ongoing avoidance, remediation and mitigation of actual and potential effects over time, I recommend that the provisions are explicit in requiring that an application for resource consent(s) for new landfill activity must provide copies of a 'Landfill Management Plan'. Rather than preparing a document, with associated sub-topic management plans (including an 'Ecological and Landscape Enhancement and Restoration Plan' to address landscape and visual effects – particularly in relation to the establishment and ongoing maintenance and management of mitigation / remediation planting), the documents are likely to be amendments or updates to existing currently consented / certified management plans.

- 6.3 From a landscape and visual effects perspective, subject to: confirmation of cultural landscape effects; and the adoption of the recommended modifications outlined above (or alternative words to this effect); overall, I confirm that I support the proposed private plan change.

Peter Kensington

Consultant Specialist – Landscape Architect

On behalf of Auckland Council – North, West and Islands Planning, Plans and Places

Registered NZILA and MNZPI - Email: peter@kplc.co.nz - Phone: 027 227 8700



24 August 2020

To: Ryan Bradley, Principal Planner, Auckland Council

From: Robert Brassey, Principal Specialist Cultural Heritage, Auckland Council Heritage Unit

Subject: Private Plan Change – Auckland Regional Landfill – Historic Heritage and Special Character Assessment

1.0 Introduction

1.1 I have undertaken a review of the private plan change on behalf of Auckland Council in relation to historic heritage and special character effects, related to the proposed private plan change request for the Auckland Regional Landfill – Wayby Road.

I have a Master of Philosophy degree in anthropology (archaeology) and have worked in the field of historic heritage management for nearly 40 years, including 20 years for Auckland councils. My experience spans archaeology, built and maritime heritage and heritage policy and planning.

1.2 In writing this memo, I have reviewed the following documents:

- Archaeological Assessment: Proposed Works Dome Valley Area of Interest (Matthew Felgate/Maatai Taonga Ltd 2018)
- Auckland Regional Landfill Private Plan Change Request –Assessment of Effects and Section 32 Analysis (Tonkin and Taylor February 2020)
- Clause 23 response letter from the applicant dated 15 November 2019
- Heritage New Zealand Pouhere Taonga submission and further submission
- Submissions and further submissions by mana whenua organisations

2 Key Historic Heritage/Special Character Issues

There are no identified issues in relation to special character. The key issue in relation to historic heritage is whether the application has sufficiently assessed and addressed actual or potential effects on historic heritage.

3 Applicant's assessment

In relation to historic heritage the applicant has provided an archaeological assessment by Matthew Felgate/Maatai Taonga Ltd, (2018). Although the title would suggest that this report only addresses matters to do with archaeological sites, it does indirectly address other historic heritage values as noted on page 1 of the report.

In my opinion, the archaeological assessment provides a sufficient level of detail in relation to in-ground archaeological sites for the purposes of the proposed plan change.

Although not explicitly addressed, it is apparent from the report that there are no potential areas of special character within the plan change area.

However, the report does not include a detailed assessment of extant buildings and structures, or their setting, within the plan change area in relation to historic heritage values. It identifies two early 20th century structures (a house and shed) "with some historic heritage value" on the Springhill Estate. The assessment of these is cursory and the building interiors appear not to have been accessed. The report and private plan change request note that the Springhill Farm cottage has some features that could indicate a pre-1900 construction date and that it may potentially have archaeological value.

The archaeological assessment provides no information about whether or not there are trees that might be early plantings within the plan change area.

The report concludes that if the early 20th century (or possibly older) structures are retained, no historic heritage effects are expected. The plan change request (sec. 2.3.10) states that no works are proposed in the vicinity of the cottage.

A request for further information pursuant to Clause 23 of the Resource Management Act 1991 was made by Auckland Council on 30 September 2019. This included a request for additional information addressing historic heritage within the plan change area. The response from the applicant was

“An Archaeological assessment has been undertaken as part of the resource consent application. Development of a new landfill still needs consent under the proposed precinct provisions, so the opportunity exists to consider archaeology and heritage through this process. In addition, the precinct does not replace any of the relevant provisions in the AUP regarding historic heritage and sites of value to mana whenua, so where relevant, these would apply to future activities on the land.”

4 Submissions

Heritage New Zealand Pouhere Taonga (submission 139) has submitted that the assessment of historic heritage values in relation to the ‘Springhill Estate’ is incomplete. The submitter has requested that the applicant:

- Complete an assessment to establish the age of the cottage and farm building to determine the presence of any 19th century structural elements of archaeological and heritage value.
- Assess the cottage and farm building in relation to broader historic heritage values.
- Record any heritage features on the Auckland Council Cultural Heritage Inventory and (for any pre-1900 features) as an archaeological site on the NZ Archaeological Association database.

The Heritage New Zealand submission requests a more comprehensive assessment of historic heritage values associated with the Springhill Estate buildings and the associated setting. Section 6(f) of the RMA. In this regard it broadly parallels Council’s Clause 23 request.

I agree that there are information gaps in relation to the assessment of historic heritage as required under the provisions of the RMA as identified by Heritage New Zealand. I recommend that the submission be accepted.

5 Assessment of historic heritage effects

The applicant provided an archaeological assessment rather than a comprehensive assessment of effects on historic heritage.

The methodology employed in the assessment followed usual practice for an assessment of in-ground archaeology. However, the assessment did not include an examination of the standing buildings and their setting in sufficient detail to reach any firm conclusions regarding the age or significance of these. The building interiors appear not to have been accessed. Close examination of the buildings and any associated structures (materials, methods of construction, modifications etc) appears not to have been undertaken. Such examination and assessment would typically be undertaken by a buildings archaeologist or other relevant subject matter expert.

There is also no mention of whether the assessment considered if any planted trees within the plan change area were assessed in relation to potential historic heritage value.

Therefore, the methodology only allowed for assessment of in-ground archaeological sites, rather than historic heritage as defined in the RMA, which includes historic sites, structures, places, areas and surroundings. The assessment is inconclusive in regard to the age of the buildings, their historical associations, original function and their significance.

6 Conclusions

The applicant has not adequately assessed the private plan change effects on the environment in relation to historic heritage.

This is inconsistent with the Auckland Regional Policy Statement Historic Heritage objectives and policies, in particular:

B5.2.1. Objectives

- (1) Significant historic heritage places are identified and protected from inappropriate subdivision, use and development

The D17 historic heritage overlay rules only apply to scheduled historic heritage places. Therefore, protection of significant historic heritage places that are not currently scheduled relies on such places being identified in areas subject to plan changes during the assessment process, and then being added to the schedule. To state that no works are proposed in the vicinity of part of a plan change area provides no guarantee that this will not change in the future, and leaves the unscheduled historic heritage unprotected by the plan rules if it does.

An assessment of historic heritage is required which considers all of the historic heritage values identified in the Unitary Plan B5 policies, specifically in relation to the buildings and settings within the Springvale Estate. This should include:

- Whether the buildings or any part of the surroundings are archaeological sites and whether they are significant
- Whether the standing buildings or other structures are significant
- Whether there are any associated historic plantings that have significant historic heritage value
- A statement confirming that the plan change area has been assessed in relation to historic heritage by appropriate subject matter experts; what the results are; and what recommendations arise from the assessment
- Recording of any identified archaeological sites or other places of historic heritage value in the appropriate database.

7 Recommendation

While I would not go as far to recommend that PC42 be declined based on the inadequate assessment of historic heritage within the precinct, I do consider that such an assessment is important to be carried out during a plan change process. Therefore, I recommend that the precinct provisions be amended to require that this information is provided along with an application for a new landfill or a discharge from an existing landfill. My recommended changes to the precinct are below.

...

I617.9. Special information requirements

~~There are no special information requirements in this precinct.~~

I617.9. Landfill in Sub-precinct A (A1) and Discharges to air, land or water (A6 and A7)

- (1) The first application made for a new landfill (A1) or discharges from existing landfills (A6 and A7) must be accompanied by an assessment of historic heritage which considers all of the historic heritage values identified in the Unitary Plan B5 policies, specifically in relation to buildings, settings, and historic plantings within the precinct.

...

The alternative to the recommended precinct changes above would be for the applicant to provide the full assessment of historic heritage prior to, or at the hearing. This information could then be assessed, and I could reconsider my recommendation at that time.

S42a Report Input – Review of economic assessment of proposed Auckland Regional Landfill and submissions

To: Warwick Pascoe & Ryan Bradley

From: Shyamal Maharaj & Shane Martin, Chief Economist Unit

Date: 1/09/2020

1. APPLICATION DESCRIPTION

Application and property details

Applicant's Name: Waste Management NZ Limited (WMNZ)

Application number: BUN60339589 and Private Plan Change 42

Activity types: Resource consent and private plan change request from WMNZ

Description: Resource consent for the construction and operation of a new regional landfill in the North of Auckland between Warkworth and Wellsford. Private plan change request to add a precinct to the Auckland Unitary Plan that sets up a consent pathway for the Auckland Regional Landfill.

Site address: 1232 State Highway 1, Wayby Valley

2. MEMO DESCRIPTION

- 2.1. This technical memo provides an economic review of the “Assessment of Economic Effects” report provided as part of the applicant’s resource consent application. No further information on the economic case for the private plan change has been provided, so this review relies on information provided in the resource consent application/private plan change request and responses to the s.92/Cl.23 questions on that application/request. A full description of the proposal is provided in the Assessment of Environmental Effects (AEE) for the application prepared by Tonkin & Taylor Ltd for Waste Management NZ Ltd and dated May 2019.

3. EVALUATION OF THE ECONOMIC ASSESSMENT REPORT

3.1. The applicant identifies and assesses the economic impacts of the proposed location, construction and operation of the Auckland Regional Landfill (ARL) in their report. This report uses an economic impact assessment (EIA) methodology. This technical memo details the Chief Economist Unit's (CEU) feedback on the report and the s.92/CI.23 responses prepared by Mike Copland from Brown Copland & CO Ltd on behalf of the applicant (WMNZ).

3.2. CEU's understanding of the applicant's evidence:

There are two separate but related processes underway by WMNZ. The first is an application for resource consents to locate, develop and operate a new regional landfill serving mainly the Auckland Region in the Wayby Valley between Warkworth and Wellsford. The second is a private plan change request to include a precinct in the Auckland Unitary Plan to set up a consent pathway for a landfill. Both these processes rely on the same economic assessment information and therefore our comments below relate to both the resource consent application and the private plan change request.

The applicant has identified that a landfill must be developed in the North of Auckland given the wind down and eventual decommissioning of its Redvale landfill. We understand their argument to be the following:

- 3.2.1. Auckland will need a new landfill to meet the demands of a growing population and associated waste disposal because Redvale will reach capacity by 2028.
- 3.2.2. In its current form, Hampton Downs landfill will not be able to accommodate Auckland's growing landfill requirements, as Hampton Downs will also require extensions to their consent for increasing capacity which is uncertain and where current capacity will not satisfy Auckland's needs.
- 3.2.3. For the purposes of the economic evaluation, the criteria used to select the proposed site is sufficient in order to ascertain a reasonable counterfactual to help inform the evaluation of the economic costs and benefits of the proposed Wayby Valley site.

3.3. Recommendations and Reservations

We agree that, if Redvale landfill is approaching capacity and there is no new significant technological or other solution to dispose of waste available, then a new landfill is needed for Auckland and that an alternative outside of Auckland is not likely to result in a better outcome for Aucklanders. Our conclusion rests on the assumption that a new landfill is needed and the practical and economic considerations in locating it in the Auckland region (costs to serve, distances to travel with resultant emissions etc), rather than the applicant's economic evidence. We have several reservations about the economic evidence submitted. Our concerns are based on the issues we raised in our s.92/CI.23 questions for the applicant, which have not yet been fully addressed.

- 3.3.1. There are limitations in the applicant's economic analysis that mean the results are not as credible as they would be if a best-practice Cost benefit analysis (CBA) methodology was adopted.
- 3.3.2. CBA methodology requires that non-financial or non-monetary effects be recognised as best as possible so they can be taken into account along with financial costs or benefits – see the NZ Treasury guidance for example, or Auckland Council's *Guide to weighing benefits and costs*.

A cost benefit analysis should weigh up all these economic effects against each other to enable a balanced decision. Response 4F states that it is double counting if all effects are included in the

CBA, in contrast to those highlighted in the broader AEE document. This is not necessarily the case. A CBA considers all economic effects (which definitionally includes social, cultural, and environmental effects – all effects that affect welfare/utility).

These non-financial impacts should at least be described or proxied if a dollar value cannot be ascribed when tabulating the net benefits/costs of the project so as to complete a meaningful evaluation. Some of these effects are described in the Costs and Benefits table provided in the s.92/Cl.23 response, so this indicates that the author has considered this to some extent, but our view is that a better sense of scale should be provided.

- 3.3.3. Only direct economic effects should be counted in a standard best practice CBA, not indirect or induced impacts. Further, the RMA does not endorse the measurement of indirect impacts. As such, multipliers should not be used in the analysis, as this does not fit with international best practice for weighing up costs and benefits, and is more an approach used for economic impact analysis (EIA), which doesn't help decide whether a course of action is appropriate or not.
- 3.3.4. The net impact on employment presupposes that the counterfactual site would be outside Auckland. If this is the case, then it follows that keeping the landfill in Auckland would protect jobs here. However, if a reasonable alternative site exists inside Auckland, these jobs would largely be displaced from one location to another. While one location may benefit from new jobs, another part of the region would lose, and economic impacts generally rely far more on where money is spent (usually near someone's home) than where it is earned. Given that this landfill is ostensibly replacing the Redvale landfill, there should be no net regional change in jobs, except changes in how the landfill operates. It is likely more automation rather than less would be adopted in a brand-new landfill, so it is hard to expect that new additional jobs would be added.
- 3.3.5. The applicant has provided their rationale for the selection of the site based on criteria to help inform their decision. This balanced a range of trade-offs based on primary, secondary and tertiary constraints. Nevertheless, at face value, any new landfill site is going to be associated with environmental, social and potentially cultural challenges. Thus, the question at hand isn't whether the new site will create challenges, but whether the proposed site is one that would minimise these impacts and how that site is compared against a reasonable counterfactual.

3.4. **Assessment of submissions**


- 3.4.1. The Chief Economist Unit reviewed the submissions that are relevant to the economic assessment, i.e. those relevant to the evaluation of the economic costs and benefits of the proposed landfill. This means that a set of submissions that mentioned impacts on the environment, transport network, social dynamic, cultural issues and financial impacts were reviewed across those in support, neutral or in opposition to the proposed landfill site.
- 3.4.2. Any site for a landfill is going to have some detrimental impacts on the nearby environment. The question is simply whether in choosing a site those impacts have been minimised relative to the benefit to Aucklanders of providing waste management services.
- 3.4.3. Submissions in favour of the proposed landfill tended to be those focused on the economy. They recognised that the Auckland region is growing and will continue to grow, and that waste is an inevitable by-product of growth. Infrastructure and building work will also produce waste (despite waste minimisation practices and on-going research into concepts like the circular economy). Furthermore, it follows that the Wellsford area that the landfill is expected to operate in could be a catalyst for industrial and commercial activity, which could provide other benefits to the community. These need to be thoroughly measured.

- 3.4.4. Other submissions focused on some of the typical challenges associated with a landfill.
- 3.4.4.1. The use of technology to mitigate the adverse impacts of a landfill operating near an urban population due to concern over externalities like leachates or other toxic chemicals spilling over into neighbouring rivers, or streams.
 - 3.4.4.2. Traffic safety, congestion, adverse impacts of trucks using dangerous/busy roads to transport waste.
 - 3.4.4.3. Environmental damage as a result of operations including toxins in the rivers, lakes and waterways that supply the urban population’s drinking water.
 - 3.4.4.4. The release of greenhouse gases.
 - 3.4.4.5. Impacts on Auckland’s access to reliable and quality supplies of water, especially given the current drought.
- 3.4.5. Given that any landfill will have some environmental, financial, or social costs, the real question is whether the proposed site is one that will minimise these costs compared to alternative sites. The applicant has provided limited information on how they evaluated alternatives for a landfill to the north/north-west. Their analysis, not all of which we have been privy to, purports to show that, once their self-identified primary, secondary and tertiary constraints have been considered, the proposed site is the best option for a new landfill in the north/north-west.

4. REVIEW

Memo prepared by:


Shyamal Maharaj



Economist, Chief Economist Unit, Auckland Council

1/09/2020

Shane L. Martin, PhD

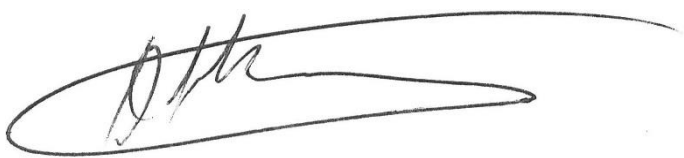


Senior Economist, Chief Economist Unit, Auckland Council

1/09/2020

Technical memo reviewed and approved for release by:

David Norman



Chief Economist, Auckland Council

Date:

1/09/2020

ATTACHMENT 6

AUCKLAND COUNCIL CLAUSE 25 DECISION ON PLAN CHANGE 42

Auckland Unitary Plan Operative in Part Private Plan Change request for Auckland Regional Landfill – Wayby Valley



Clause 25 Recommendation

In accordance with Auckland Council Combined Chief Executives Delegation Register (updated June 2019), all powers, functions and duties under Schedule 1 of the Resource Management Act 1991, except for the power to approve a proposed policy statement or plan under clause 17 of Schedule 1 (this power cannot be exercised by any Council officer or Hearings Commissioner), are **delegated** to the relevant T4 Manager.

This private plan change request requires decision-making pursuant to **clause 25(2)(b)** of Part 2 of Schedule 1 of the Resource Management Act 1991, to determine whether it will be adopted, accepted, rejected or processed as a resource consent.

The recommendation in this case, having considered all relevant material, is to **accept** the private plan change request.

Ngā kaihaina Signatories

Author of recommendation	Ryan Bradley – Principal Planner Plans and Places  Date: 13 March 2020
Authoriser	Pursuant to the delegated authority above, I accept the clause 25 recommendation above. Warren MacLennan – Manager Planning – North/West Plans and Places  Date: 13 March 2020

Te take mō te pūrongo

Purpose of this report

1. To consider under clause 25 of Part 2 of Schedule 1 of the Resource Management Act, a private plan change request to add a new Auckland Regional Landfill precinct to the Auckland Unitary Plan (Operative in part) planning maps and introduce new provisions, specific to the precinct.

Whakarāpopototanga matua

Executive summary

2. This report considers a private plan change request (**'the request'**) received on 14 August 2019 from Waste Management New Zealand (**'the requestor'**) to add a new Auckland Regional Landfill precinct to the Auckland Unitary Plan (Operative in part) planning maps and introduce new provisions, specific to the precinct.
3. Under clause 25 of Part 2 of Schedule 1 to the Resource Management Act 1991 (RMA), the council is required to make a decision that either:
 - a) adopts the request as if it were a proposed plan made by the council, which must then be processed in accordance with the provisions of Part 1 of Schedule 1 (clause 25(2)(a)); or
 - b) accepts the private plan change request, in whole or in part, which then triggers a requirement to notify the request, or part of the request, under clause 25 (clause 25(2)(b)); or
 - c) rejects the private plan change request in whole or in part, in reliance on one of the limited grounds set out in clause 25(4); or
 - d) decides to deal with the request as if it were an application for a resource consent (clause 25(3)).
4. It is recommended that the private plan change request be accepted under clause 25(2)(b) and notified for submissions on the basis that the request does not meet the criteria for rejection under clause 25(4) of Schedule 1 to the RMA, having regard to relevant case law, and it is more appropriate to accept the request than to adopt it or treat it as a resource consent application.

Ngā tūtohunga

Recommendation/s

5. That under delegation the Planning Manager, North West and Islands – Plans and Places:
 - a) accepts the private plan change request from Waste Management New Zealand to add a new Auckland Regional Landfill precinct to the Auckland Unitary Plan (Operative in part) planning maps and introduce new provisions, specific to the precinct, included as **Attachment A** to this report pursuant to clause 25(2)(b) of Schedule 1 to the Resource Management Act for the following reasons:

- i) having regard to relevant case law the request does not meet the limited grounds for rejection under clause 25(4);
 - ii) it is more appropriate to accept the request than 'adopt' it or treat it as a resource consent application.
- b) undertakes the required notification and other statutory processes associated with processing the private plan change request pursuant to Schedule 1 to the Resource Management Act.

Horopaki Context

Proposed precinct site and surrounding area

6. The proposed Auckland Regional Landfill precinct is located in Wayby Valley, approximately 70km north of Auckland. State Highway 1 runs past the site to the south west, and the site is approximately 6km southeast of Wellsford and 13km northwest of Warkworth. The proposed precinct covers an area of approximately 1,020ha of land comprising a number of legal titles purchased by Waste Management New Zealand ('WMNZ'). A location map of the precinct is shown in Figure 1 below.
7. The proposed precinct contains varying topography. In general, the western side is dominated by the relatively flat pastoral farmland of Springhill Farm, sloping gently and then more steeply up as it moves eastward away from the Hōteio River. The eastern side is characterised by ridges and a number of gullies.
8. The proposed precinct location contains a number of intermittent and permanent streams and tributaries including the Waiwhiu Stream and Waiteraire Stream. All watercourses within the proposed precinct location are tributaries of the Hōteio River. Groundwater within the proposed precinct is generally free from contamination and is akin to naturally occurring conditions.
9. The land within the proposed precinct comprises a mixture of land use typologies. The proposed precinct comprises a mix of land uses being:
 - Exotic forest covering approximately 729ha of the proposed precinct, predominately on the eastern side of the precinct;
 - Pasture covering approximately 213ha (the working Springhill Farm) and dominating the western side of the precinct; and
 - Native habitats covering approximately 135ha of the proposed precinct including 11 distinct native habitat types.
10. Within the Springhill Farm area there are is an existing dwelling as well as existing farm utility buildings and sheds. There is also a working airstrip, with associated hangar buildings.
11. The native vegetation on the site is in generally considered to be of high ecological value with areas of significance including mature kahikatea and pukatea forest, taraire and tawa, podocarp forest and kauri, podocarp and broadleaved forest.
12. A range of native fauna inhabit the site including bats, birds, lizards, frogs and invertebrates. Of particular note is the likely presence of two species classified as nationally threatened (long-tailed bat and the Australian bittern) and sizeable populations of three 'At Risk' species (fernbird, spotless crane, and Hochstetter's frog).

13. The plantation forestry area, which dominates the eastern side of the precinct, is part of a larger contiguous forestry area known as the "Dome Forest". The forestry within the precinct and in the surrounding plantation forestry is at a similar stage of harvest cycle, being 15 to 25 year-old exotic pine forest that is within its third harvest cycle.
14. To the west and north-west of the proposed precinct the topography flattens out, with rolling hills and land uses that are predominantly agricultural. Land use is largely dairy, beef and sheep farms, and lifestyle blocks. There are also a number of small businesses operating from properties in the surrounding area.
15. Approximately 3.5km northwest of the boundary of the proposed precinct is the town centre of Wellsford, while Warkworth is on the southern side of the Dome Forest
16. There are significant tracts of native bush within the wider area, including the Sunnybrook Scenic Reserve and the Dome Forest Stewardship Area. The Sunnybrook Scenic Reserve is located south of the proposed precinct, adjoining State Highway 1. Within the south-eastern extent of the Dome Forest, Te Araroa Trail and Dome Forest Walkway are popular walking routes. These are located at least 3km from the area proposed for waste to be placed.
17. Within the proposed precinct there are a number of private roads that are predominantly used for the forestry operation. There are also a number of unformed legal roads across the precinct, some of which coincide in part with the formed private roads.
18. State Highway 1 adjoins the proposed precinct to the south west and is the key national transport route between Auckland and Whangarei. This highway passes through the Dome Valley between the townships of Warkworth and Wellsford. Within the Dome Valley it is a two-way, two-lane road with two northbound and one southbound passing lane opportunities between Warkworth and Wellsford. The speed limit has been reduced here to 80 km/h due to a disproportionately high number of crashes that occur in the area. The New Zealand Transport Agency ('NZTA') is currently undertaking safety improvements on a 15km stretch of State Highway 1 through the Dome Valley, to address known safety issues. This work is scheduled for completion prior to the proposed landfill operation being established.
19. NZTA currently has a proposal to realign State Highway 1 between Warkworth and Wellsford, which is the second stage of Ara Tūhono Pūhoi to Wellsford project. This project is likely to ultimately extend just north of Te Hana. Stage one, between Pūhoi and Warkworth, is currently under construction, with an estimated completion date of late 2021. The indicative alignment of the Warkworth to Wellsford section shows the route cutting across the south-western corner of the proposed precinct. NZTA is looking to lodge the Notice of Requirement (NoR) in the first quarter of 2020 in order to secure route protection. However, there is currently no predicted commencement date for the construction works.
20. The Auckland Unitary Plan (Operative in Part) ('AUP') zoning over the proposed precinct is Rural Production. Additionally, the site contains a number of controls and overlays in the AUP including those for Significant Ecological Areas and Natural Stream Management Areas. A number of designations are also adjacent to the subject land including the designations for SH1, the gas and petroleum pipelines, and the Wellsford Water Treatment Plant.

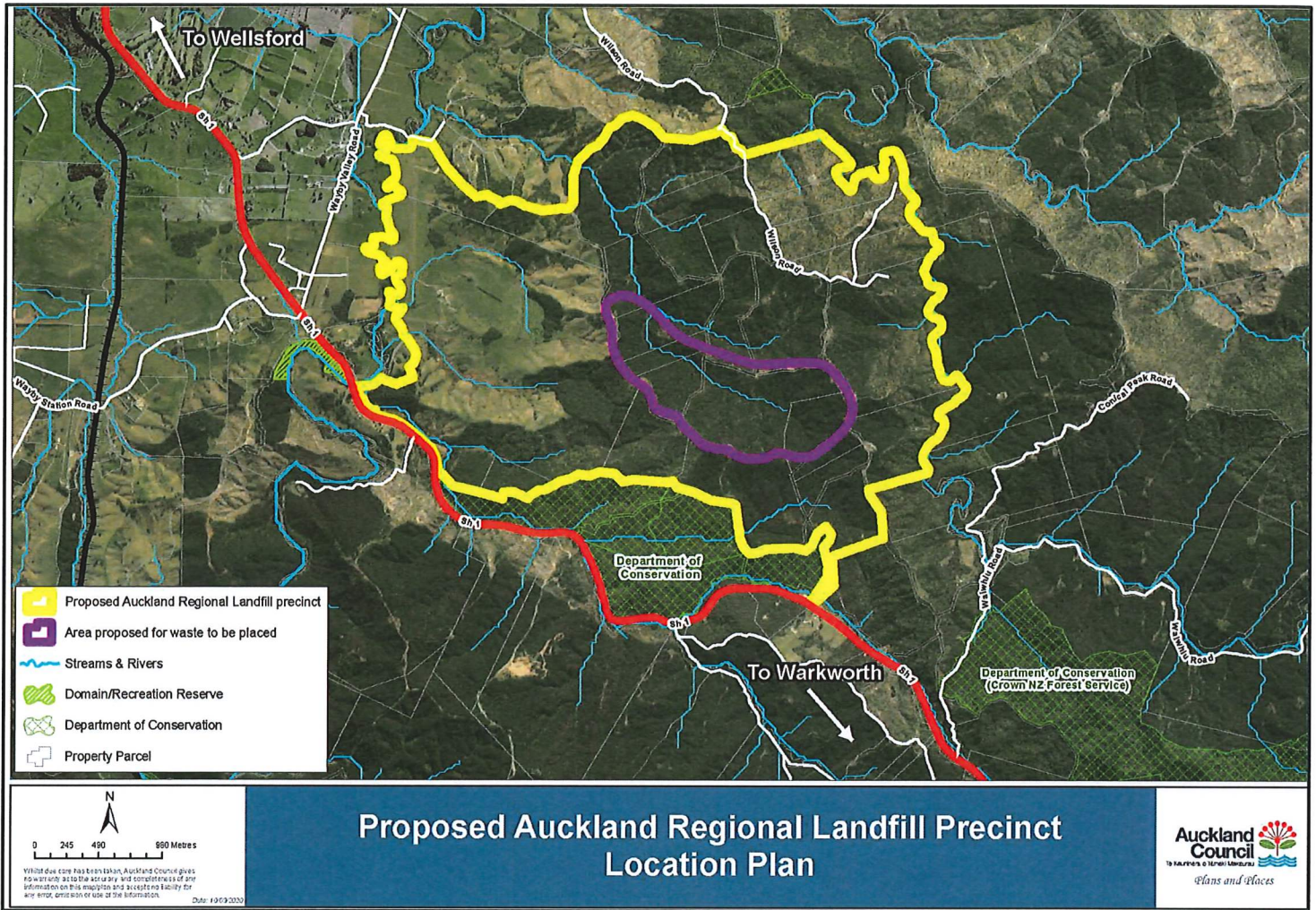


Figure 1: Location Plan

Private Plan Change Request

21. The request was formally lodged on 14 August 2019 (refer to **Attachment A**) and was updated in February and March 2020. The private plan change seeks to add a new Auckland Regional Landfill precinct to the AUP planning maps and introduce new provisions, specific to the precinct.

22. The following documentation has been provided in support of the request (refer to **Attachment A**):

- Private Plan Change Request (amended March 2020) – including an assessment of environmental effects and section 32 analysis prepared by Tonkin and Taylor.
 - Technical Report A Geotechnical factual report
 - Technical Report B Geotechnical interpretive report
 - Technical Report C Probabilistic seismic hazard assessment
 - Technical Report D Air quality assessment
 - Technical Report E Hydrogeological assessment

- Technical Report F Water quality baseline Monitoring Report
- Technical Report G Assessment of aquatic and terrestrial ecological values and effects Report
- Technical Report H Landscape and Visual Assessment Report
- Technical Report I Assessment of economic effects
- Technical Report J Traffic
- Technical Report K Archaeological Assessment
- Technical Report L Assessment of Environmental Noise Effects
- Technical Report M Integrated Transport Assessment
- Technical Report N Engineering Report
- Technical Report O Waste Acceptance Criteria
- Technical Report P Stormwater and Industrial and Trade Activity Report
- Technical Report Q Draft Landfill Management Plan Contents Page
- Technical Report R Sediment and Erosion Control Assessment
- Technical Report S Risk Management Assessment
- Technical Report T Health Risk Assessment Report
- Compiled Further Information Responses

23. The request report by Tonkin and Taylor (dated February 2020) states that:

- *WMNZ has gone through an extensive site identification and selection process over nearly a decade, which considered a range of factors including access, site size, buffer availability, geology and environmental and cultural factors. This process resulted in the identification of the Wayby Valley site as the preferred location for the landfill due to a number of features, including:*
 - *Its proximity to central Auckland;*
 - *Its proximity to State Highway 1;*
 - *Ability to maintain adequate separation distance from sensitive receivers;*
 - *Avoidance of identified and mapped sites of cultural significance;*
 - *Avoidance of significant ecological features and other features identified in the Auckland Unitary Plan (AUP);*
 - *Appropriate underlying geology.*
- *Extensive investigation of the proposed precinct has been undertaken for the purpose of supporting the resource consent application which was lodged in May 2019. Consequently, WMNZ requests a private plan change to recognise the distinct set of characteristics of this site. This private plan change seeks to introduce a new precinct into the AUP – the Auckland Regional Landfill Precinct. The precinct will identify the precinct in the planning maps, and will introduce new provisions, specific to the precinct. The reasons for the private plan change are summarised as follows:*
 - *To appropriately recognise landfills as infrastructure within the AUP, by identifying a site within Auckland that has been assessed as being suitable for a new landfill, and describing this site through the use of a precinct and managing future effects of activities within the precinct through bespoke objectives, policies and rules;*
 - *In anticipation of a landfill being established at the site, providing recognition of the site in the planning framework for the Auckland Region, consistent with the*

treatment of other largescale infrastructure in the region, and to manage potential future reverse sensitivity effects;

- *To enable efficient operation of a future landfill at the site throughout its operating life, by targeting future re-consenting requirements to the nature of the discharge and measures to avoid, remedy or mitigate effects.*

- *This report assesses the private plan change against the requirements of Schedule 1 and s32 of the RMA, and concludes:*
 - *The proposed precinct will generate positive effects, and has no level of potential adverse effects which would make the site unsuitable for consideration for landfill construction and operation.*
 - *The precinct and sub-precinct provisions will ensure future development within the Precinct gives effect to and is consistent with the AUP Regional Policy Statement, the regional and district plan objectives and policies in the AUP, as well as the Auckland Plan.*
 - *The proposed precinct, including the objectives, are consistent with the purpose of the RMA. The proposed objectives of the private plan change are considered to be the most appropriate and effective means of achieving the purpose of the RMA, compared to the current zone or practicable alternative options.*
 - *The proposed precinct is considered to be the most appropriate option for achieving the objectives of the private plan change and more broadly the objective and policies of the AUP. The private plan change will efficiently and effectively achieve the overarching objectives of the AUP, in particular the themes of enabling infrastructure whilst ensuring effects of future activities within the precinct are appropriately assessed and managed.*

24. The existing zoning of the land subject to the precinct in this private plan change request is shown in **Figure 2** below.

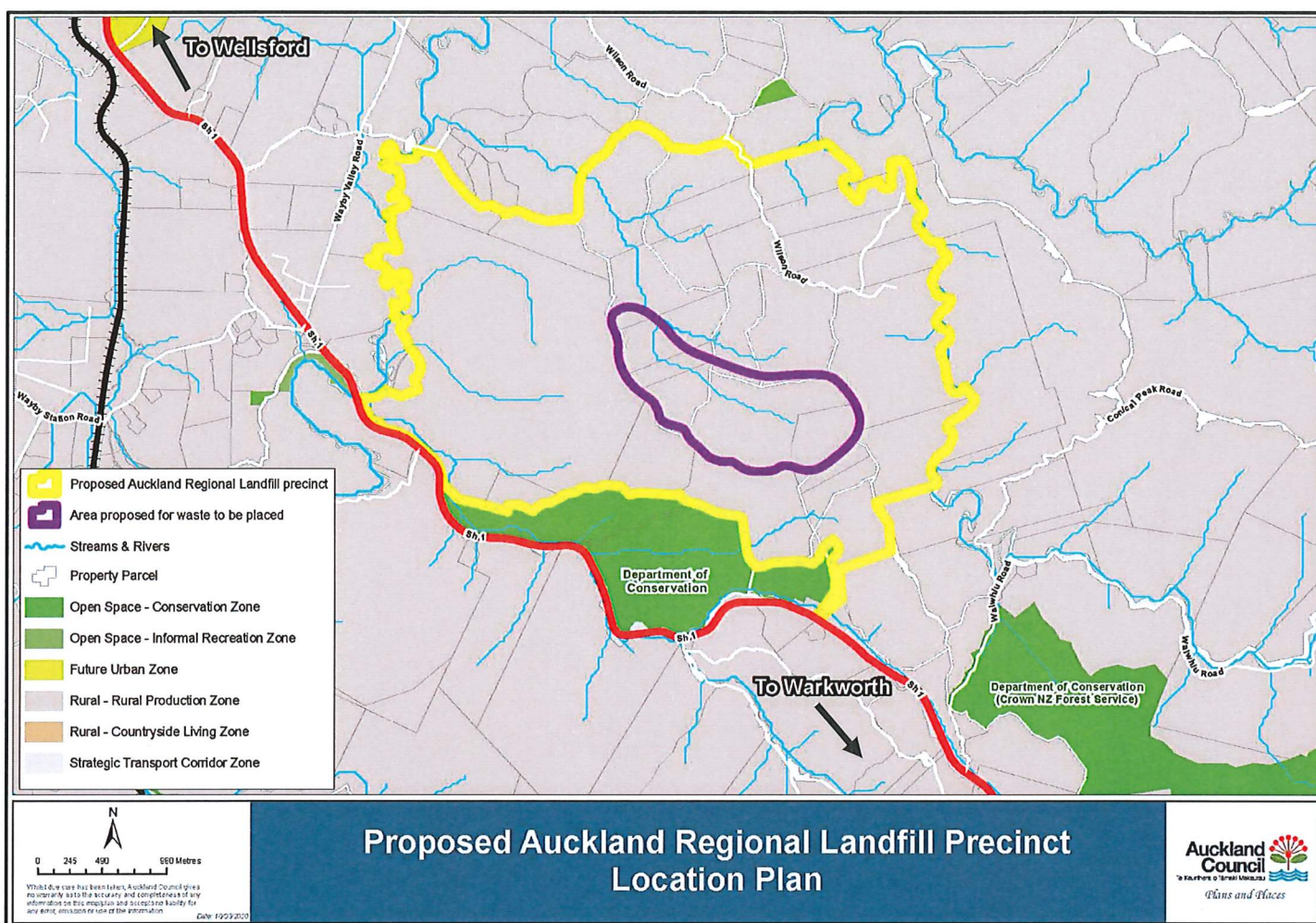


Figure 2: Existing zoning of Wayby Valley area

25. On 30 September 2019 further information was requested from the applicant concerning Air quality, Environmental risk and waste acceptance, Historic heritage, Landfill engineering, groundwater, and surface water takes, Terrestrial biodiversity and freshwater ecology, Transport, Health, Stormwater, Noise, Geotechnical, Economic, Land disturbance, and Planning. WMNZ responded on 15 November 2019 and the council requested further information on Transport, Health, Healthy Waters, Landfill engineering, groundwater, and surface water takes, and Environmental risk and waste acceptance.
26. The council reviewed this information and requested further information on 24 December 2019. Further information was received from WMNZ on 3 February 2020. The council reviewed this information and requested further information on Environmental Risk. WMNZ supplied this on 4 March 2020. Council's experts have now reviewed all the information and have confirmed that it is now adequate for assessment.
27. It is considered that the information provided at lodgement and in response to the clause 23 requests is sufficient for the council to consider the request, given the scale and significance of the actual and potential effects anticipated from the development through the private plan change.

Tātaritanga me ngā tohutohu Analysis and advice

Resource Management Act 1991

28. The process for considering private plan change requests is set out in Part 2 of Schedule 1 of the RMA. Under clause 21 any person can request a plan change of the appropriate local authority. Once lodged, the local authority can request additional information under clause 23 and can modify the request under clause 24, but only with the applicant's agreement.
29. Under clause 25, after receiving the request and all additionally required information and modifying the request (where relevant), the local authority is required to make a decision to either:
- Adopt the request as if it were a proposed plan change made by the council, which must then be processed in accordance with the provisions of Part 1 of Schedule 1 (clause 25(2)(a)); or
 - Accept the private plan change request, in whole or in part, which then triggers a requirement to notify the request, or part of the request under clause 25 (clause 25(2)(b)); or
 - Reject the private plan change request, in whole or in part, in reliance on one of the limited grounds set out in clause 25(4); or
 - Decide to deal with the request as if it were an application for resource consent (clause 25(3)).

Option 1 – Adopt the request, or part of the request, as if it were a proposed plan change made by the council itself (cl 25(2)(a))

30. The council can decide to adopt the request and process it as though it were a council-initiated plan change. If a request is adopted, all costs associated with the plan change would rest with the council.
31. Concurrent with this private plan change request, the applicant has also lodged a resource consent application to establish a landfill on the subject site. The suitability of the site for a specific landfill proposal will be tested through a publicly notified resource consent process. Before the resource consent application is determined there is no justification or sound resource management reason for the council to adopt this private plan change request (and thereby giving tacit support to the overall landfill proposal on this site). Such an approach would give the impression that the council has pre-judged the resource consent proposal and would confuse the (already complex) combined resource consent and private plan change process.
32. It is also relevant to note that the applicant has not requested that the council adopt the private plan change.
33. Therefore, it is recommended that council **does not adopt** the private plan change as if it were a Council initiated plan change.

Option 2 – Decide to deal with the request as if it were an application for a resource consent (cl 25(3))

34. The council can decide to deal with the private plan change request as if it were an application for resource consent. In this case the applicant has already lodged a separate application for a resource consent to establish a landfill on the site.
35. The private plan change request seeks to introduce a precinct to identify a landfill on the AUP maps and enable future consenting and re-consenting of a landfill. The most appropriate process for achieving the application of a precinct and new plan provisions is through this plan change process, and the outcomes sought by the applicant cannot readily be achieved by a resource consent process.
36. It should be noted that one of the reasons that WMNZ wish to include a precinct in the AUP is to ensure (if the resource consent is granted and established) that future landowners in the area can easily see that a landfill is operating in the area. A granted resource consent will not appear on the AUP maps. Again, this outcome sought by the applicant cannot readily be achieved by a resource consent process.
37. It is therefore recommended that council **not decide** to deal with the request as if it were an application for resource consent.

Option 3 – Reject the request (cl 25(4))

38. There are a limited number of matters under clause 25(4) that enable council to reject a private plan change request. The matters are listed below followed by an assessment of the private plan change request against each matter.

Is the request frivolous or vexatious?

39. The terms frivolous and vexatious are not defined in the RMA but have evolved through case law to generally mean “trivial” or “without substance” and with regard to “frivolous” something that is intended to “harass”, “frustrate” or cause “financial cost to their recipient”.
40. The private plan change request includes a section 32 evaluation and a report containing an assessment of effects. In addition, the request includes a large number of technical reports that examine the site and the potential effects of a landfill in this location.
41. Overall, it is considered that the proposal is not frivolous or vexatious. It is therefore recommended that the council **not reject** the private plan change request on the basis that it is frivolous or vexatious.

Has the substance of request been considered and given effect to or rejected by the council in the last two years?

42. These provisions of the RMA largely seek to discourage repetitive private plan change requests that are substantially the same, with the associated costs to the council and community.
43. WMNZ have been through a new landfill site identification process over the last decade and in 2019 lodged the resource consent application and private plan change request with council. This is a proposed new site for a landfill and prior to these current processes, this site has not been considered by the council for a landfill precinct.
44. It is therefore recommended that the council **not reject** the request on this basis.

Has the substance of the request been given effect to by regulations made under section 360A in the last two years?

45. Section 360A of the Act relates to regulations amending regional coastal plans pertaining to aquaculture activities. The substance of this private plan change request does not relate to Section 360A of the Act.

46. It is therefore recommended that the council **not reject** the request on this basis.

Is the request in accordance with sound resource management practice?

47. The term 'sound resource management practice' is not defined in the Act. The High Court in *Malory Corporation Limited v Rodney District Council* (CIV-2009-404-005572) where the issue on appeal was determining the correct interpretation of clause 25(4), considered this term in light of clause 25(4)(c) of Schedule 1 and stated:

"... the words "sound resource management practice" should, if they are to be given any coherent meaning, be tied to the Act's purpose and principles. I agree too with the Court's observation that the words should be limited to only a coarse scale merits assessment, and that a private plan change which does not accord with the Act's purposes and principles will not cross the threshold for acceptance or adoption."

48. Having undertaken a coarse merits assessment of the request documentation and the specialist reports, it is considered that the request is in accordance with sound resource management practice. The request should therefore be taken to the next stage which is to test the precinct proposal through the public submissions and hearings process.
49. It is clear from early publicity of the landfill proposal that a precinct for landfill is likely to be unpopular with many locals and some in the wider public due to the real or perceived environmental effects of the activity. There may be some people who question whether landfills have a legitimate role in the future of waste management and some may argue that potentially enabling a landfill through a precinct is not in accordance with sound resource management practice.
50. It is relevant to refer to Auckland Council's Auckland Waste Management and Minimisation Plan (2018). This plan has a vision stating that "Auckland aspires to be Zero Waste by 2040, taking care of people and the environment, and turning waste into resources."
51. 'Zero Waste' is about "making the most of the resources we have, using them for their highest and best value, and sending nothing to landfill or to incinerators."
52. However, the plan does stress that it is a journey to achieve Zero Waste, with a goal to reduce waste to landfill by 30% by 2027 and to zero by 2040. It is also acknowledged "it's not yet technically or economically feasible to divert all materials from landfill". The plan refers to "continuing to manage residual waste effectively and efficiently while progressively reducing Auckland's reliance on landfills".
53. The plan identifies landfill disposal as a poor waste management option, particularly in the context of managing organic wastes which decompose over time and release methane. Disposing residual waste is at the least preferred end of the waste hierarchy (see **Figure 3** below). However, while disposal to landfill is the least preferred method, the plan notes that "it is important Auckland continues to manage residual waste effectively for public and environmental health and safety reasons".

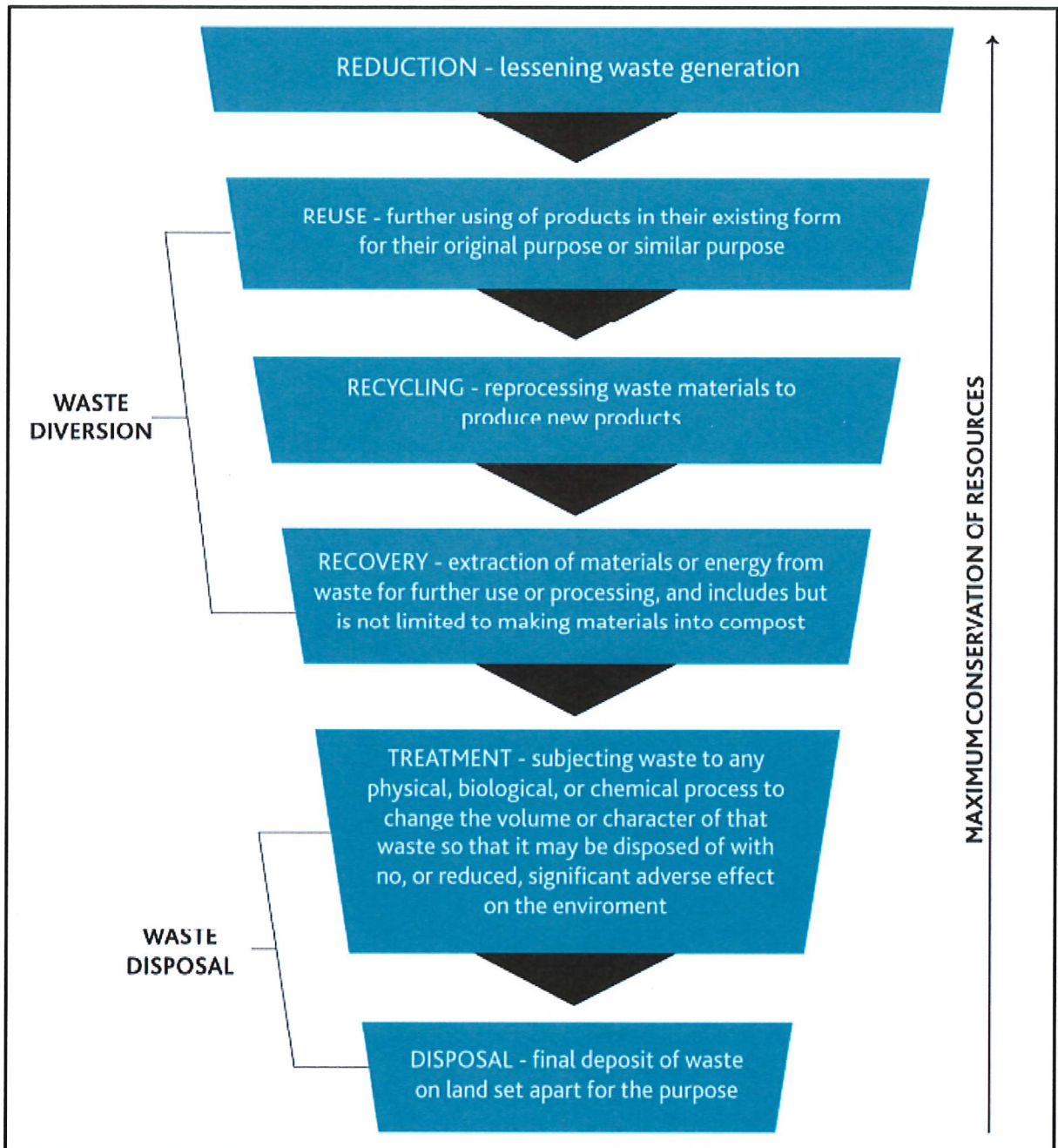


Figure 3: Waste Hierarchy diagram (from Auckland Waste Management and Minimisation Plan (2018))

54. The Auckland Waste Management and Minimisation Plan acknowledges that landfills will still have a role to play in the medium term until Auckland reaches the goal of Zero Waste. This is especially so as it is still cheaper to send waste to landfill than to divert it into other productive uses (due to the currently low waste levy – set by central government). The plan includes a priority for the council to lobby the government to increase the waste levy.
55. The above discussion addresses the private plan change request for a new landfill precinct at a high-level along with the relevant council waste plan and the request is considered to be in accordance with sound resource management practice. It is therefore recommended that the Council **not reject** the private plan change on the basis that it is not in accordance with sound resource management practice.

Would the request or part of the request make the policy statement or plan inconsistent with Part 5 of the RMA?

56. Part 5 sets out the role and purpose of planning documents created under the RMA, including that they must assist a local authority to give effect to the sustainable management purpose of the RMA.
57. A preliminary assessment indicated that the proposed plan change is not inconsistent with Part 5, but the validity of the conclusions in the request documentation would be best dealt with via a submission and hearing process so that these matters can be considered in full.
58. It is therefore recommended that the council **not reject** the private plan change request under clause 25(4)(d).

Has the district plan to which the request relates been operative for less than two years?

59. The district plan provisions of the AUP relevant to this request were made operative on 15 November 2016. The provisions have therefore been operative for more than two years.
60. It is therefore recommended that the council **not reject** the private plan change request on the basis that the relevant parts of the AUP have been operative for more than two years.

Option 4 – Accept the private plan change request, in whole or in part, and proceed to notify the request, or part of the request (cl25(2)(b))

61. If the council accepts the request, in whole or in part, it must then proceed to notify the request, or part of the request under clause 26. After the submissions period has closed, the council would need to hold a hearing to consider submissions, and a decision would then be made by the council in relation to the request in accordance with Schedule 1 of the RMA. All associated costs (including notification and any hearing) would rest with the applicant.
62. This is the only remaining option available to the council for consideration. It is supported on the basis that the request does not meet the criteria for rejection under clause 25(4) of Schedule 1 to the RMA, having regard to relevant case law, and it is more appropriate to accept the request than to adopt it or treat it as a resource consent application.
63. It is therefore recommended that the council **accepts** the private plan change request.

Conclusion

64. The private plan change seeks to add a new Auckland Regional Landfill precinct to the AUP planning maps and introduce new provisions, specific to the precinct. The plan change is supported by various technical reports.
65. Having carefully assessed the request against the relevant matters set out in the RMA and associated case law, it is recommended that council decide to accept the request and notify it for submissions.

Ngā whakaaweawe me ngā tirohanga a te rōpū Kaunihera

Council group impacts and views

66. Auckland Transport (AT) have been involved in the early assessment of the private plan change request for adequacy of information. AT will also have the opportunity to further review the plan change and may choose to lodge a submission on it when it is publicly notified.
67. The proposed landfill precinct is not able to connect into any of Watercare's water or wastewater systems (due to the distance from the nearest water infrastructure). The closest Watercare asset is the Wellsford Wastewater Treatment Plant. Watercare will have an interest in the private plan change provisions that cover the potential risk of leachate getting into the groundwater. This is due to the potential impacts on their current water take in the vicinity for the Wellsford town supply, and impacts on any potential future water supply sources in the area. Watercare will have the opportunity to further review the plan change and may choose to lodge a submission on it when it is publicly notified.

Ngā whakaaweawe ā-rohe me ngā tirohanga a te poari ā-rohe

Local impacts and local board views

68. The Rodney Local Board will be asked for their views on the private plan change after the clause 25 decision is made, and any views provided will be included in the hearing report. The local board will be informed of the hearing date and invited to speak at the hearing in support of its views.

Tauāki whakaaweawe Māori

Māori impact statement

69. The requestors advise that they have contacted all iwi groups with mana whenua interested over the area of the precinct to give an overview of the proposal. Ongoing discussions and site visits have occurred between WMNZ and a number of iwi groups including Ngati Manuhiri, Ngati Whatua o Kaipara, Ngati Rango, Te Runanga o Ngati Whatua, and Te Uri o Hau.
70. If the council accepts the plan change for notification, all relevant iwi authorities (including those mentioned above) will be notified in accordance with the RMA and will have the opportunity to make submissions on the private plan change on issues that are important to them.

Tauākī whakaaweawe āhuarangi

Climate impact statement

71. In June 2019, Auckland Council declared a climate emergency that included a commitment for all decision-makers to consider the climate implications of their decisions. In particular, consideration needs to be given in two key ways:
- a) how the proposed decision will impact on greenhouse gas emissions and the approach to reduce emissions

- b) what effect climate change could have over the lifetime of a proposed decision and how these effects are being taken into account.

72. Under Section 7 of the RMA the council is required to have particular regard to the effects of climate change when considering any changes (public or private) to the AUP. However, this Clause 25 report on the private plan change request is a process decision only and the opportunity to consider the effects of climate change will be during the submissions and hearing stages later in the process.

Ngā ritenga ā-putea **Financial implications**

73. If accepted, the council's costs associated with processing the private plan change request would be met by the applicant.

Ngā raru tupono me ngā whakamaurutanga **Risks and mitigations**

74. The only risk associated with recommendations made in this report is a judicial review by a third party. This risk is considered to be low and mitigated by the analysis provided in this report.

Ngā koringa ā-muri **Next steps**

75. If the private plan change is accepted for notification, the implementation of this decision will follow the process set out in clause 26 of Schedule 1 of the RMA. This requires that the private plan change is notified within four months of being accepted, unless this time frame is waived in accordance with section 37 of the RMA.

Ngā tāpirihanga **Attachments**

76. The following attachments are included with this report:

- **Attachment A** – Private Plan Change request documentation titled **Auckland Regional Landfill: Wayby Valley** (as revised March 2020), including supporting technical reports.

ATTACHMENT 7

RODNEY LOCAL BOARD VIEWS ON PLAN CHANGE 42 (RD/2020/108)

24 Local board views on Private Plan Change 42 for the Auckland Regional Landfill - Wayby Valley

Member S Garner and Member C Smith declared an interest in this item and took no part in the discussion or voting on the matter.

Member T Holdgate declared an interest in this item but considered there was no conflict.

Ryan Bradley – Principal Planner was in attendance via electronic link for this item.

Resolution number RD/2020/108

MOVED by Chairperson P Pirrie, seconded by Member V Kenny:

That the Rodney Local Board:

- a) **provide the following local board views on Private Plan Change 42 by Waste Management New Zealand Ltd for a new Auckland Regional Landfill precinct on around 1,000ha of land in Wayby Valley:**
 - i) **acknowledges that waste is produced by Aucklanders and should be managed and disposed of within Auckland to enable the sustainable management of the waste stream**
 - ii) **request that more effort is required within the overall industry to recycle and re-use waste rather than dispose of it to landfill**
 - iii) **believes that the applicant is in a good position to provide sustainable solutions to the disposal of waste due to their international experience in the management of waste streams and their many years of experience in the industry**
 - iv) **does not support the Proposed Plan Change 42 for landfilling activities in the proposed location as the Plan Change will enable activities which contribute to carbon emissions and climate change and will elevate climate risks**
 - v) **considers that the Plan Change has not met the objectives of Section E3.2 of the Auckland Unitary Plan that seeks that Auckland's rivers and streams are restored, maintained or enhanced, and that reclamation of the beds of rivers and streams are avoided unless there are alternatives**
 - vi) **requests that the applicant consider alternative locations and alternative ways of preventing stream loss in this application**
 - vii) **note that Wayby Valley has always been known as an area of significant ecology due to its stony-bottomed streams which are the habitat of native Hochstetter frogs, which are highly endangered and are generally only found in this part of Rodney**
 - viii) **believe that the Plan Change is deficient in not considering avoidance of the destruction of the habitat of the threatened species, and that the proposed Precinct overlay for a landfill is inappropriate for this location**
 - ix) **note that Waka Kotahi has recently designed and upgraded the intersection of State Highway 1 and Wayby Valley Road, and that this upgrade did not consider the additional heavy truck movements from this application**

- x) believe that the intersection upgrade does not provide enough lanes now to cater for the additional truck movements and this will cause more than minor adverse traffic effects in this vicinity which cannot be mitigated
 - xi note that Waka Kotahi have advised that the intersection cannot be further upgraded in time to meet the needs of this application, and the applicant has not proposed an upgrade to this intersection at their own cost to alleviate these effects
 - xii) request that Auckland Council planners thoroughly consider the significant number of submissions in opposition to the Proposed Plan Change 42 from affected parties in Rodney
 - xiii) recommends that the application for the Proposed Plan Change 42 be declined based on the activity being inappropriate for the location, the ecology of the area, presence of threatened species in the area, and traffic issues, which will arise from activities associated with a Landfill Precinct overlay
- b) appoint Member D Hancock and Chairperson P Pirrie as an alternate to speak to the local board views at a hearing on Private Plan Change 42.

CARRIED

Note: Pursuant to Standing orders 1.9.7 Member S Garner, Member T Holdgate and Member C Smith requested their abstention be recorded.

ATTACHMENT 8

DIRECTIONS FROM THE HEARING PANEL FOR PRIVATE PLAN CHANGE 42

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of Private Plan Change 42 to the Auckland Unitary Plan that proposes to introduce a new precinct for a regional landfill and resource consent applications for a regional landfill at Wayby Valley, both by Waste Management NZ Limited

DIRECTIONS OF THE CHAIRPERSON OF COMMISSIONERS

1. On 13 March 2020, Auckland Council (the **Council**) accepted for notification Waste Management New Zealand Limited's (**WMNZ** or the **Applicant**) request for a Private Plan Change 42 – Auckland Regional Landfill, Wayby Valley (**PPC42**) under Schedule 1 to the Resource Management Act 1991 (**RMA**) as well as Resource Consent applications that are being notified under section 95A of the RMA (together, **Applications**).
2. WMNZ seeks to obtain Resource Consents for the construction and operation of a new regional landfill facility within the Wayby Valley area, between Warkworth and Wellsford.
3. PPC42 seeks to introduce a new precinct into the Auckland Unitary Plan-Operative in Part (**Unitary Plan**) – the Regional Landfill Precinct Plan that would provide for (subject to a consent process) the Auckland Regional Landfill by way of specific identification and plan provisions.
4. The Applications were duly notified on 26 March 2020; submissions closed on 26 May 2020, at which point approximately 780 submissions were received on the resource consent applications, and approximately 200 received on the private plan change request. The summary of submissions was notified on 25 June 2020, with further submissions closing on 9 July 2020.
5. Under section 34A of the RMA, Council appointed Independent Hearing Commissioners Sheena Tepania (as Chair), Alan Watson, Michael Parsonson, David Mead and Wayne Donovan (**the Panel**), to hear submissions and make decisions in a joint hearing on PPC42 and the notified Resource Consent applications for the Auckland Regional Landfill.

Memorandum from the Applicant

6. Council received a Memorandum of Counsel dated 25 June 2020 on behalf of WMNZ seeking pre-hearing directions on the following:
 - (a) That late submissions up until 31 July 2020 be accepted.
 - (b) Urgent confirmation of hearing dates.

- (c) Directions regarding the identification of expert witnesses from all parties and conferencing and caucusing of those witnesses.
- (d) Directions relating to the timing of the provision of evidence and the Council's section 42A Report and, in order to be fair to all parties, that the standard timeframes be doubled.

Late submissions

- 7. The Council will accept submissions on both the plan change and the resource consent applications up until 31 July 2020. Submissions filed up to that date will be accepted, so as to provide certainty to submitters who may have been unable to file a submission before 26 May 2020 and also to allow time for those submissions to be considered by Council officers prior to finalising their section 42A Report.
- 8. After this time, the Panel will consider whether to accept late submissions as submissions are received in order to give submitters certainty and again, if necessary, at the commencement of the hearing.

Hearing dates

- 9. The hearing has been set down for 20 days beginning Monday 9 November and will continue as follows:
 - (a) Week 1: 9-12 November
 - (b) Week 2: 17-20 November
 - (c) Week 3: 24-27 November
 - (d) Week 4: 30 November - 3 December
 - (e) Week 5: 8-11 December.

A further three days from 16 – 18 December will be set aside as overflow days should the Panel require them.

- 10. The hearing will be held at the Warkworth Town Hall or a similar venue in the locality.

Identification of expert witnesses and conferencing

- 11. The Panel acknowledges the importance of early identification of experts and the benefits that expert conferencing can provide. However, given the timeframes for the provision of expert evidence, the acceptance of late submissions to 31 July and the fact that some submitters may not have engaged experts at this stage, the Panel is not issuing directions for formal expert conferencing at this point.
- 12. The Panel will hear the evidence of all the experts for different parties at the hearing and will then consider whether expert caucusing may be required to better define the issues. If the Panel believe that caucusing is necessary after hearing all the evidence, it will issue a direction at that stage.

13. That being said, this does not preclude parties from making their own arrangements to undertake expert caucusing and the Panel certainly encourages parties to do so.

Provision of evidence

14. All expert evidence will need to be pre-circulated in order that the Panel can pre-read it and hearing time (in relation to that evidence), be devoted principally to questions the Commissioners may have of the expert witnesses.
15. Expert evidence briefs shall have a succinct executive summary at the front wherever practicable (it is accepted that some expert briefs of evidence do not lend themselves to succinct summary).
16. The hearing timetable provides the opportunity also for rebuttal evidence to be filed, to further promote an efficient hearing process.
17. The Panel encourages all parties (including Council) represented by counsel, to pre-circulate their opening legal submissions in advance of their timetabled hearing date (preferably at least three (3) working days prior to the day on which they will appear). All parties will be assisted if the Panel is able to pre-read those legal submissions and hearing time be devoted to any questions the Panel may have arising from such pre-reading. Oral submissions by counsel should reflect the fact that the Panel has read counsel's written submissions. In particular, it will not be necessary for counsel to read large sections of their written submissions aloud. Counsel are requested to lodge electronic copies of any cases on which they will rely at the same time as they lodge their legal submissions.
18. Sections 37 and 37A of the RMA provide that the statutory timeframes of the RMA can be doubled, subject to the provisos therein. The timeframes can also be further extended to a time that exceeds twice the maximum period if the applicant requests or agrees.
19. Considering the quantity and technical nature of the evidence for this hearing the Panel agrees with the Applicant's request to double the statutory timeframes and as such the timeframes for the pre-circulation of evidence and the Council's section 42A Report are directed as follows:
 - (a) The Council officer's section 42A RMA Report is to be made available to the Hearings' Advisor by **9am, Tuesday 22 September 2020**
 - (b) That the section 42A RMA Report be circulated to the Panel and the submitters and posted on Council's website, as soon as possible after receipt but in any event no later than **5pm, Thursday 24 September 2020**
 - (c) Pursuant to sections 41B(3) and (4) RMA, that the Applicant's expert evidence is provided to the Hearings' Advisor by **midday Thursday 8 October 2020**
 - (d) That the Applicant's expert evidence be circulated to the Panel and the submitters and posted on Council's website as soon as possible after receipt but in any event, no later than **5pm, Thursday 8 October 2020**
 - (e) Pursuant to sections 41B(3) and (4) RMA, that if any person who has made a submission/further submission intends to call expert evidence at the hearing

(generally being evidence given by a professional with specialist qualifications and experience) then that party is to provide that evidence to the Hearings' Advisor by **midday Thursday 22 October 2020**

- (f) That the submitters' expert evidence be circulated to the Panel and the submitters and posted on Council's website as soon as possible after receipt but in any event, no later **5pm, Thursday 22 October 2020**
- (g) We request that the Applicant's supplementary evidence, rebuttal statements and legal submissions be provided to the Hearings' Advisor by **9am on Wednesday 4 November 2020**.
- (h) Any submitter presenting non-expert evidence or submissions at the hearing is welcome to pre-circulate these should they wish to do so, noting for the avoidance of doubt, that it is not a requirement. "Non-experts" are persons who do not provide expert evidence at these types of proceedings. They will have the opportunity to present written or oral evidence at the hearing in the normal manner. They do not need to pre-circulate their own statements or representations before the hearing commences.

Format of the hearing

- 20. The Panel supports both hearing processes being held contemporaneously and seeks to ensure that submitters are able to hear the Applicant's representations and evidence prior to presenting their own cases.
- 21. To that end, the Panel would prefer the Applicant to present their opening legal submissions and evidence on both PPC42 and the resource consent applications before the submitters and therefore recommends the following format:
 - (a) Hearing Panel opens the hearing and accepts the section 42A Report as being read.
 - (b) WMNZ presents its opening legal submissions and evidence on both the **resource consent applications** and the **private plan change request**.
 - (c) Submitters make their representations and present their evidence on the resource consent applications and/or where applicable, also on the private plan change request.
 - (d) WMNZ presents any rebuttal evidence (of evidence presented for the first time at the hearing).
 - (e) Council staff address their section 42A Report and any updates arising out of the material presented after their section 42A Report was circulated.
 - (f) WMNZ presents its formal reply.
- 22. These Directions are to be circulated to all the parties to the hearing by the Hearings Advisor. That may be by email.
- 23. For further information on the format of evidence required please refer to the notification letter attached.

Any enquiries regarding these Directions or related matters should be directed to Sam Otter, Senior Hearings' Advisor by email at sam.otter@aucklandcouncil.govt.nz.



Sheena Tepania
Chairperson
14 July 2020

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of Private Plan Change 42 to the Auckland Unitary Plan that proposes to introduce a new precinct for a regional landfill and resource consent applications for a regional landfill at Wayby Valley, both by Waste Management NZ Limited

AND

IN THE MATTER

of Late Submissions

DECISION OF THE PANEL

1. Under section 34A of the Resource Management Act 1991 (**RMA**), Auckland Council (the **Council**) appointed Independent Hearing Commissioners Sheena Tepania (as Chair), Alan Watson, Michael Parsonson, David Mead and Wayne Donovan (the **Panel**), to hear submissions and make decisions in a joint hearing on Waste Management New Zealand Limited's (**WMNZ** or the **Applicant**) request for a Private Plan Change 42 – Auckland Regional Landfill, Wayby Valley (**PPC42**) under Schedule 1 to the RMA as well as Resource Consent applications that are being notified under section 95A of the RMA (together, **Applications**).
2. We have also been delegated the Council's powers under section 34A of the RMA in relation to procedural matters regarding those hearings, including the Council's powers under section 37 to waive or extend time limits in respect of the lodgement of submissions and further submissions and to deal with omissions and inaccuracies in submissions and further submissions.
3. The Applications were publicly notified on 26 March 2020 and the period for lodging submissions closed on 26 May 2020. The summary of submissions was

notified on 25 June 2020 and the period for lodging further submissions closed on 9 July 2020.

4. Counsel for WMNZ confirmed by way of Memorandum that in light of the Covid-19 restrictions, the Applicant would agree to any late submissions being filed no later than 31 July 2020, but reserved its position in respect of submissions filed after that date.
5. The first Direction issued on 14 July 2020 recorded the position that Council would accept submissions on both the plan change and the resource consent applications filed up until 31 July 2020 and after that date, the Panel would consider whether to accept any late submissions.
6. A Summary of Decisions Requested was notified on 20 August 2020 (**SDR**) with Further Submissions to close on 3 September 2020.

Powers in Relation to Waiving and Extending Time Limits

7. Late submissions may be accepted if a waiver or time extension is granted in accordance with sections 37 and 37A of the RMA. Section 37A sets out the matters that need to be considered. They are:
 - (1) A consent authority or local authority must not extend a time limit or waive compliance with a time limit, a method of service, or the service of a document in accordance with section 37 unless it has taken into account —
 - a) The interests of any person who, in our opinion, may be directly affected by the extension or waiver; and
 - b) The interests of the community in achieving adequate assessment of the effects of the proposed plan; and
 - c) The Council's duty under section 21 to avoid unreasonable delay.
8. Importantly, the timeframes can only be extended to a time that exceeds twice the maximum period if the applicant requests or agrees (s.37A(2)(b)).

Late submissions received after 31 July 2020

9. Three submissions have been received by Council after the closing date of 31 July 2020. All three submissions are on PPC42. Two of the submissions are amended

submissions lodged after that date. In other words, in terms of the amended submissions, the original submissions were lodged in time, but the submitters subsequently lodged material to replace the original submissions in whole or in part, and that replacement material was received after 31 July 2020.

10. The three submissions require individual consideration.

Mr Alistair de Joux

11. On 4 August 2020 at 5.14pm, the Council received by email a submission on PPC42 from Mr Alistair de Joux without an application to waive the time for lodgement.
12. The submission seeks to add additional comments on the topic of alternative means of waste disposal including alternative technologies for the treatment of residual waste, to Mr de Joux' original submission dated 26 May 2020. That original submission is identified in the SDR as submission #111.
13. The reason given by the submitter for the delay in lodging this submission was outlined in his email to Auckland Council dated 31 July 2020 which stated that he intended to add to his original submission but was awaiting clearance from his colleague, Mr Andrew Short, to use some of his written material.
14. According to Mr de Joux, the written material to be added had been prepared by Mr Short "in relation to the resource consent application referenced in his comments." In providing this additional information, Mr de Joux noted his intention that these comments would assist the Commissioners in determining both the proposed plan change and the resource consent application.
15. We note that the Council received a submission from Mr Andrew Short in relation to PPC42, identified in the SDR as submission #375. The information contained within that submission is identical to the additional information now provided by Mr de Joux.
16. In relation to Mr de Joux' late submission we make the following findings:
 - The additional material expands upon Mr de Joux' original submission #111 and would be better to be tabled and/or presented to the Hearing Panel when his submission #111 is heard.

- Waiving the time limit to include this material as an addition to Mr de Joux' original submission #111 is unnecessary.

Aotearoa (NZ) Sustainability Foundation (ASF)

17. On 11 August 2020, Mr Dudley Ward, CEO of the Foundation, sent an email to Council headed "Submission for - Plan Change / Variation Number 42 - Attachments Update", without an application to waive the time for lodgement.
18. The submitter did not give any reason for the delay in lodging this submission. The text of the email makes it clear that Mr Dudley is attempting to replace Attachments 1-4 to ASF's original submission #378 and add further detail to, and evidence to support, this original submission.
19. In relation to ASF's late submission we make the following findings:
 - The additional material expands upon ASF's original submission #378 without adding any additional substance. It is material that would be better to be tabled and/or presented to the Hearing Panel when the Foundation's submission #378 is heard.
 - Waiving the time limit to include this material as an addition to Mr Ward's original submission #378 is unnecessary.

Grey Power, Otamatea Inc.

20. On 5 August 2020 at 4.59pm, the Council received a submission on PPC42 from Ms Beverley Aldridge headed "Submission", and without an application to waive the time for lodgement.
21. The submitter did not give any reason for the delay in lodging this submission. The submission opposes PPC42 and raises concerns with regard to:-
 - Landscape and Visual amenity;
 - Water quality;
 - Ecology;
 - Public Health; and
 - Traffic congestion.

22. While this late submission raises legitimate resource management issues, it addresses concerns that are already contained in other 'on time' opposing submissions before the Panel to consider, and therefore the late submission adds nothing new to the assessment of PPC42.
23. Accordingly, it is our view that an *adequate assessment of the effects of the proposed plan* can be made without accepting this late submission and consequently, the time limit for receipt of this submission will not be waived.

Decision on the late submissions

24. In relation to section 37A(1)(a), the Applicant is a person directly affected by the extension or waiver. Directions regarding timeframes for the pre-circulation of evidence and the Council's section 42A Report were issued essentially doubling the statutory minimum periods, in line with the Applicant's request. These timeframes were set in consideration of the Applicant's agreement to any late submissions being filed **no later than 31 July 2020** and recording, as noted previously, that the Applicant would reserve its position in respect of submissions filed after that date.
25. While also considering the Council's duty to avoid unreasonable delay (s37A(1)(c)), we note that if we were to grant these waiver applications, and indeed any further waiver applications, the Council would be obliged to publicly notify a summary of the submissions and allow the lodgement of further submissions. Whether other persons consider themselves directly affected would be determined by that process.
26. However, that process places a further financial cost on the Applicant and the timing of the hearing is such that any delay may impact commencement of the hearing process which is presently scheduled to begin 9 November 2020 in Warkworth.
27. In considering section 37A(1)(b), it is our view that waiving the time for lodgement would not serve the community's interests.

28. Consequently, for the reasons set out above, it is our finding that an appropriate assessment of the effects of PPC42 can be made without extending the time limit to accept these late submissions.
29. On this basis those late submissions detailed above are not accepted.

Any enquiries regarding this Decision or related matters should be directed to Sam Otter, Senior Hearings' Advisor by email at sam.otter@aucklandcouncil.govt.nz.



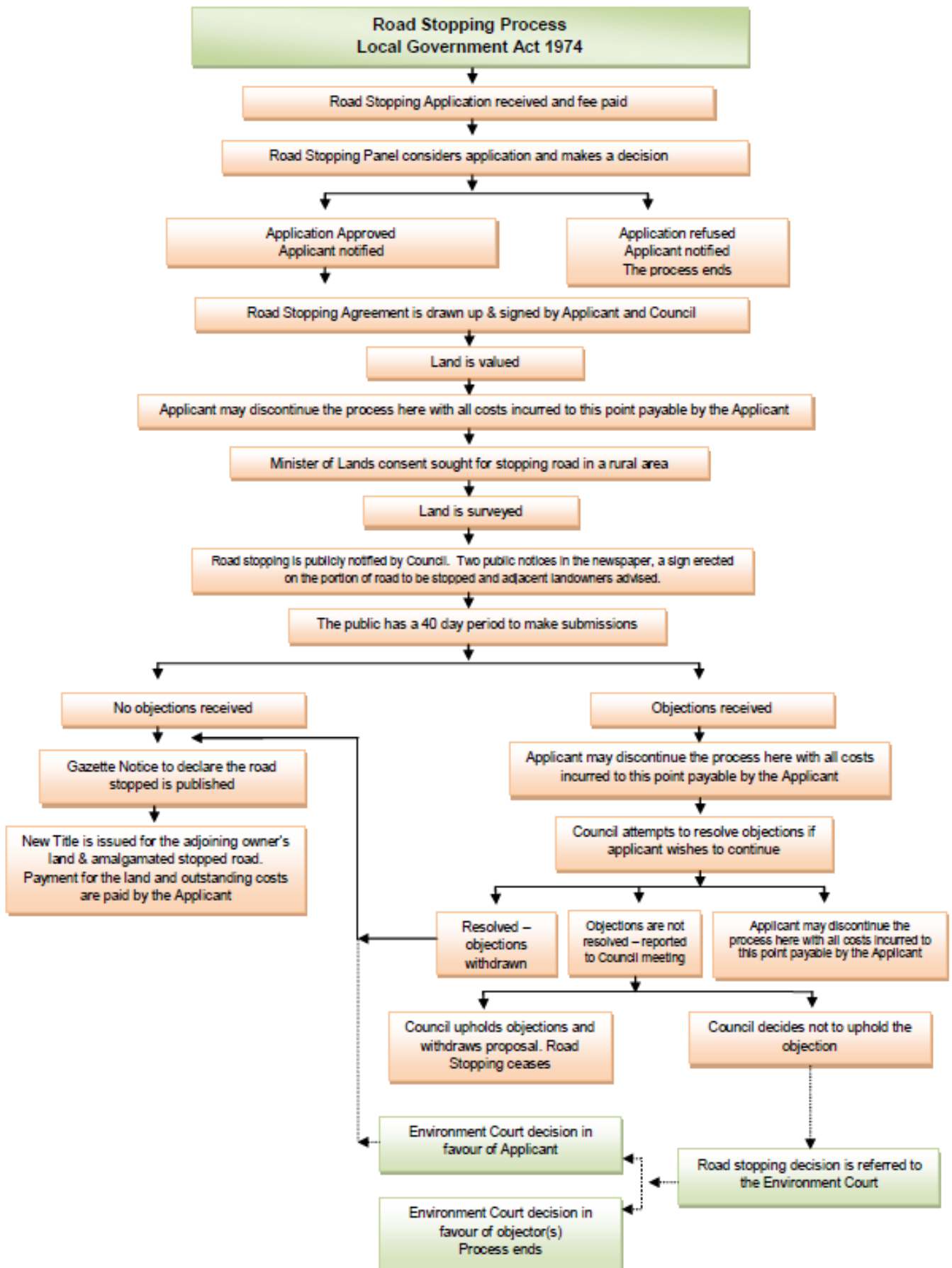
Sheena Tepania

Chairperson on behalf of the Panel

24 August 2020

ATTACHMENT 9
ROAD STOPPING PROCESS

This process diagram is taken from the Tasman District Council's *Unformed Legal Roads: Road Stopping and Purchase - A Guide for Applicants*. The process is the same in Auckland but the "Road Stopping Panel" in the third step is replaced with "Auckland Transport Board".



ATTACHMENT 10

MEMO ON ABILITY TO CONSIDER CLIMATE CHANGE

Memo

28 August 2020

To: Mark Ross, Consultant Planner;
Ryan Bradley, Principal Planner;
Warwick Pascoe, Principal Project Lead

From: Paul Crimmins, Senior Specialist – Contamination, Air & Noise

Subject: Auckland Regional Landfill: Climate Change Considerations

Waste Management NZ Ltd (WMNZ) is seeking consent to discharge contaminants into air from the construction and operation of a new landfill for municipal waste in Dome Valley, Rodney. This memo outlines the legislative framework for the emissions of greenhouse gases (GHG) from the operation of the Auckland Regional Landfill (ARL) and resulting climate change effects.

In summary, sections 70A and 104E of the Resource Management Act 1991 (RMA) state that Auckland Council must not set rules in the Auckland Unitary Plan (Operative in Part) (AUP(OP)) relating to GHG emissions or assess the associated effects on climate change as part of any application for resource consent. Given the prohibition of a climate change effects assessment, I do not assess GHG emissions in this memo and merely outline the reasons for this omission to provide an explanation for the reporting officers and submitters.

Concerns regarding the climate change effects of the ARL was one of the most-common themes of submissions. These were typically stated in general terms with reference to the generation of the GHG methane by decomposing waste in the landfill.¹ Others, such as Mahurangi East Residents and Ratepayers Association (RC submission #9512) and The Sustainable Energy Forum Inc (RC #9826), focussed on the GHG emissions from trucks transporting waste to the landfill. The Auckland Low Carbon Action Plan was frequently referenced by submitters to show that the ARL did not align with Auckland Council's objectives.²

Sections 70A and 104E of the RMA state:

- 70A *Application to climate change of rules relating to discharge of greenhouse gases*
Despite section 68(3), when making a rule to control the discharge into air of greenhouse gases under its functions under section 30(1)(d)(iv) or (f), a regional council must not have regard to the effects of such a discharge on climate change, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases, either—
- (a) in absolute terms; or*
 - (b) relative to the use and development of non-renewable energy.*

¹ While not seeking to assess the climate change effects, I note here that methane is a powerful short-term climate forcing agent and is the predominant component of landfill gas, which is generated as a result of the biological decomposition of organic matter under anaerobic conditions. The *National Environmental Standards for Air Quality 2004* includes two regulations that require the Landfill to capture and destroy methane from the landfill in flares or generators meeting minimum standards. This system converts the methane to carbon dioxide to control greenhouse gas emissions. The efficacy of the proposed landfill gas control system is assessed in detail in my 24 August 2020 memo.

² Auckland Council adopted *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan* on 21 July 2020, which supersedes the previous Low Carbon Action Plan and sets a goal of zero net GHG emissions by 2050.

104E *Applications relating to discharge of greenhouse gases*
When considering an application for a discharge permit or coastal permit to do something that would otherwise contravene section 15 or section 15B relating to the discharge into air of greenhouse gases, a consent authority must not have regard to the effects of such a discharge on climate change, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases, either—
(a) in absolute terms; or
(b) relative to the use and development of non-renewable energy.

Sections 70A and 104E of the RMA were inserted by the *Resource Management (Energy and Climate Change) Amendment Act 2004*. Relevant case-law directs that GHG emissions are to be addressed under a national framework and cannot be considered as part of a council's RMA functions (see: *Greenpeace New Zealand Inc v Genesis Power Limited [2008] NZSC 112*).³

Section 7(i) of the RMA was also inserted by the 2004 Energy & Climate amendment and states that an 'other matter' to have 'particular regard to' when making decisions under the RMA is 'the effects of climate change.' However, as detailed in the above case-law, the effects of climate change on a development (for example, sea-level rise causing inundation of coastal infrastructure) is notably distinct from the effects on climate change that a development shall cause/contribute to.

The national framework that GHG emissions are currently regulated by is the *Climate Change Response Act 2002*, including the Emissions Trading Scheme. Landfill operators surrender 'carbon credits' to representatively offset assumed methane emissions from waste received under the Emissions Trading Scheme. The *Climate Change Response Act 2002* has recently been strengthened by the *Climate Change (Zero Carbon) Amendment Act 2019*.

RMA sections 70A and 104E do enable councils to assess GHG emissions with respect to the benefits of renewable energy generation. I assess the renewable energy generation aspect of the proposed ARL with reference to the *National Policy Statement for Renewable Electricity Generation 2011* (NPS:REG) in section 7.1.1 of my 24 August 2020 Resource Consent Technical Memo. In summary, the generation of electricity from the combustion of landfill gas is defined as a form of renewable energy and the reduction of GHG emissions enabled by the establishment of this renewable energy generation aligns with the NPS:REG.

Also 'within scope' for GHG emission considerations for the ARL applications are the requirements of the *Resource Management (National Environmental Standards for Air Quality) Regulations 2004* (NES:AQ). Regulations 26 and 27 of the NES:AQ require that GHG emissions are controlled at landfills by landfill gas extraction and control systems meeting minimum requirements. Sections 70B and 104F of the RMA enable rules to be inserted in a Regional Plan or a decision on a resource consent (including conditions) to implement a National Environmental Standard relating to GHG emissions provided that they are 'no more or less restrictive' than the standard. I recommend conditions of consent for ARL to ensure compliance with the NES:AQ regulations for controlling methane emissions, including that a landfill gas extraction system is installed prior to the receipt of 200,000 tonnes of waste (see sections 7.1.2 and 8.3 of my 24/08/20 memo).

³ Principal Environment Court Judge L. Newhook prepared a history of the legislative framework and case-law leading up to the above Supreme Court case for the 2008 RMLA Conference: www.rmla.org.nz/wp-content/uploads/2016/09/rmla08_judgelaurienewhook_climatechangeandtherma.pdf

The *Resource Management Amendment Act 2020* repeals RMA sections 70A and 104E from 31 December 2021, removing the preclusion of GHG and climate change assessments within Regional Plans and resource consent applications after this date.⁴ This change was included to align the RMA with the *Climate Change (Zero Carbon) Amendment Act 2019* until a wider revision of NZ's resource management system (as proposed by the recent review completed by Hon. T. Randerson) is enacted.⁵ The delayed repeal of these RMA sections is to provide time for national direction to be provided to avoid regional inconsistency in GHG emission reductions plans.

Paul Crimmins
MSc(Hons), BA
Senior Specialist



Contamination, Air & Noise | Specialist Unit | Resource Consents

Date:

28 August 2020

⁴ Clause 26 of the *Resource Management Amendment Act 2020* states that plan changes and consent applications lodged prior to the amendment are to be considered as if the changes have not been made (i.e. with s70A and s104E in force).

⁵ A brief discussion of the reasons for repealing RMA sections 70A and 104E is provided on pages 15-17 of the Environment Committee's Report: www.parliament.nz/en/pb/sc/reports/document/SCR_96439/resource-management-amendment-bill

